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UNIVERSITY OF ALBERTA

INSTRUCTIONAL METHODS FOR STUDENTS WITH MENTAL RETARDATION IN TANZANIA

BY

©

MARY WANJIKU MBOYA

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of DOCTOR OF PHILOSOPHY.

IN

SPECIAL EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON ALBERTA

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The undersigned certify that they have read, and recommended to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled INSTRUCTIONAL METHODS FOR STUDENTS WITH MENTAL RETARDATION IN TANZANIA submitted by MARY WANJIKU MBOYA in partial fulfilment of the requirements of the degree of DOCTOR OF PHILOSOPHY in SPECIAL EDUCATION.

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DEDICATION

To my parents my parent Claudia Wanjiru Gichohi and Nelson Gichohi Mwangi who inspired me to aspire for something better in life through education.

To my husband Dr. F. M. Mboya for his untiring support throughout my studies both in Tucson and Edmonton.

To my children Michael and Nelson who had to forego my care while I pursued my studies.

Abstract

The present study explored the instructional methods used by teachers of students with mental retardation in Tanzania. The knowledge of instructional methods used by these teachers is important for decision-making regarding the content of pre-service and in-service teacher training in Tanzania.

The purpose of the study was to develop an observation instrument that could identify and evaluate the instructional methods used by teachers of students with mental retardation in Tanzania, evaluate its validity for the Tanzanian context, and use the observation instrument to identify instructional methods used by teachers of children with mental retardation in Tanzania. The observation instrument was developed on the basis of effective instructional methods identified in North American literature.

Five special education experts and five special education teachers evaluated the observation instrument's suitability for the Tanzanian context. The observation instrument was used in a total of 44 observations, of 15 teachers from seven instructional programs for students with mental retardation in Tanzania. A second observer participated in nine of the observations to evaluate inter-observer reliability of the observation instrument.

The results of the study indicated that Tanzanian special education experts and teachers, in general, thought that the observation instrument was appropriate for the Tanzanian context. However, some suggestions for improvements to the observation instrument were made. The teacher observation data indicated that teachers of students with mental retardation in Tanzania, in general, used most of the assessed instructional methods appropriately. The observation instrument was also

useful in identifying areas in which the teachers observed needed prescriptive feedback and in-service training.

To provide a robust test of reliability of the instrument, and to assess the need for training in the use of the instrument, a reliability test was conducted by using an untrained and inexperienced observer /evaluator - the "worst possible scenario" of reliability. For some of the items the inter-observer percent agreement was unacceptably low indicating the need for observer training. The observer's lack of training in the use of the observation instrument and in the use of observation procedures in general, may have contributed to the low inter-observer percent agreement.

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CHAPTER I

LITERATURE REVIEW

Background of the Study

Special Education in Tanzania is very limited with most services being provided by non-governmental agencies. The first services for the disabled in Tanzania were provided by religious organizations. For example, the first school for the blind was established in 1950 by the Anglican church, while the first school for the deaf was established in 1963 by the Roman Catholic Church (Institute of Education, 1984). Services for persons having physical disabilities were founded by the Salvation Army in 1967, and those for the mentally retarded by the Tanzanian government in 1982. Early childhood education of the mentally retarded and of children with cerebral palsy was provided by the Society for Mental Retardation and Cerebral Palsy with the help of the Swedish Government. Muhimbili hospital, a referral hospital, ran a rehabilitation centre for school-age children hospitalized for extended lengths of time (Ministry of Education, 1989).

The focus of the present study was exploration of teaching methods used in the instruction of students with mental retardation in Tanzania. The rest of this chapter deals with: a) provision of special education services in Tanzania; b) general instructional methods; c) instruction of students with mental retardation; and d) use of observation in teacher evaluation.

Special Education Policy

Tanzania does not have a documented special education policy. Any provision of special education is based on the policy of Ujamaa (African socialism which implies equality and caring for all) and the policy of Universal Primary Education (UPE). Ujamaa policy emphasizes, among other things, equality of all people and requires that all basic services, i.e., education and health services, be provided to all Tanzanian citizens, free-of-charge. Universal Primary Education emphasizes the right of all Tanzanian citizens to a free primary education. The government of Tanzania only became involved in education for the handicapped after the services had been initiated by non-governmental organizations for all categories of handicaps except mental retardation. The government's action was initiated by demands for services made by the citizens who had become aware of handicapping conditions and the needs of children with handicaps. This awareness was gained through activities that occurred during the United Nations Year of Disabled Persons and the United Nations Year of the Child (IYDP, 1979; Jamhuri ya Muungano wa Tanzania, 1981; and Kisanji, 1981).

Current Status of Special Education Provision in Tanzania

The current situation in the provision of special education in Tanzania is indicated in Table 1. The data in Table 1 indicate that only 1,842 handicapped children in Tanzania, of primary school level, are provided with educational services. Only 110 handicapped students are provided services at the secondary school level. Only 22 handicapped students are in institutions of higher learning.

Students with physical handicaps attend regular secondary schools with no additional help. The number of students in higher institutions of learning depends on the number of students who qualify for entry into these institutions. Table 2 indicates the various types of facilities for persons with handicaps in Tanzania.

There are four types of facilities in Tanzania through which special educational services for primary

Table 1

Students at Various Levels of Education

Category	Boys	Girls	Total
Primary School Level: Standard I-VII			
Visual Impairment	360	224	584
Hearing Impairment	304	243	547
Mental Retardation	193	140	333
Physical Handicaps	167	181	348
Hospital School	___	___	30
Total	1024	788	1842
Secondary Education: Forms I-VI			
Visual Impairment	11	15	26
Hearing Impairment	60	24	84
Total	71	39	110
Teacher Training College Students			
Visual Impairment			19

University Students

Category	Year I	Year II	Year III	Total
Visual Impairment	1	1	1	3

Source: Ministry of Education (1989) Basic Information About Special Education In Tanzania.

Table 2

Facilities for the Handicapped in Tanzania

Type of School Category	Resident. Special schools	Resident. integ. Units	Non-res. special schools	Non-res. integ. units	Total
Visual Impairment	3	18	-	-	21
Hearing Impairment	5	1	-	2	8
Physically Handicapped	2	2	-	-	4
Mentally Retarded	4	1	1	17	23
Total	14	22	1	19	56

Source: Ministry of Education (1989) Basic Information About Special Education In Tanzania.

school age children are provided. These four types (with their numbers indicated in parenthesis) are as follows, a) residential special schools (14), b) residential integrated special units (22), c) non-residential special schools (1), and d) non-residential integrated special units (19). In addition to the facilities shown on Table 2, four secondary schools offer education for the visually handicapped. These schools usually have boarding facilities. Two secondary schools specializing in agricultural programs reserve five openings each for students with hearing impairments.

One college of education, Mpwapwa College of Education, has ten openings for pre-service teacher training reserved each year for qualifying, visually impaired students. Five more colleges are currently offering training for visually impaired students to become secondary school and adult education teachers. Visually impaired students in these five colleges compete for these positions with sighted graduates of form four. Students with visual impairments are offered only minimal specialized services while attending the college. The University of Dar es Salaam also offers supporting services to any visually impaired student qualifying for admission.

In addition to visually impaired students, there was one hearing impaired student between 1987 and 1989 at the University of Dar es Salaam. There are a few physically handicapped students at the university each year. No data is available on the education of students with physical handicaps at the secondary and post-secondary level as these students do not receive any specialized supporting services.

Vocational and rehabilitation services for individuals with handicaps in Tanzania are limited. As shown on Table 3, there are only six facilities providing

Table 3

Vocational Training Centres in Tanzania

Centre	Capacity	Duration	Vocational Skills
Yombo (for all handicaps) (1972)	200	2 yrs	Carpentry, shoemaking, tailoring, secretarial duties, handicraft, poultry keeping, and adult education.
Manoleo (for the blind)	50	2-3 yrs	Carpentry, weaving, agriculture, braille, reading and writing.
Masasi (for the blind)	70	2-3 yrs	Agriculture, poultry keeping, carpentry, and adult education.
Singida (for blind women)	50	2-3 yrs	Agriculture, weaving, domestic science, handicraft, braille, reading and writing.
Igange (for hearing impaired)	60	2 yrs	Adult education and technical education.
Chang'ombe (for hearing impaired)	10	2 yrs	Adult education and technical education.

Source: Institute of Education (1984). Development of Special Education in Tanzania vocational services for the handicapped in the whole of Tanzania. The vocational training provided includes secretarial training, carpentry, and various branches of agricultural education. Five sheltered workshops serving a small number of adults with handicaps are also available (see table 4).

Employment Opportunities for Individuals with Handicaps in Tanzania

Handicapped persons trained in the vocational centres are assisted by regional rehabilitation officers to settle either in wage paying or self-employment situations. While some of these persons are employed in offices, industries and factories, others join the five sheltered workshops available (see table 4). To ensure against discrimination of the handicapped in employment, a bill was passed in 1982 stipulating that 2% of the employees in each company must be trained handicapped persons. Most companies have less than two percent employees with handicaps as most individuals with handicaps lack the necessary training to cope with the demands of available jobs.

Factors Affecting Special Services for Individuals with Handicaps

Incidence and Prevalence

One of the major problems facing individuals responsible for the provision of special services for persons with handicaps in Tanzania is the lack of accurate incidence and prevalence figures. Accurate figures are not available because of problems related to criteria used for identification and the accessibility of identification services. Table 5, shows Department of Social Welfare prevalence estimates in 1980 (Institute of Education, 1984). The current prevalence and incidence of individuals with profound and severe handicaps is expected to have increased due to better health services

Table 4

Workshops for Handicapped Persons

Workshop	Capacity	Activities
Kinondoni (Dar es Salaam)	6	Tailoring and knitting
Yombo (Dar es Salaam)	9	Tricycle making
Mbeya	6	Tailoring
Mwanza	14	Tailoring
Tanga	10	Tailoring

Sources: Institute of Education, Development of Special education in Tanzania

Ministry of Education, Basic Information About Special Education In Tanzania; March 1989.

Table 5

Estimates of Prevalence of Handicaps in Tanzania

Category*	Prevalence
Blind	79,000
Deaf	51,000
Cripples	136,000
Lepers	170,000
Mentally Retarded	136,000
Total	572,000

* The categories used here are those used by the Department of Social Welfare.

Source: Institute of Curriculum Development, Development of Special Education in Tanzania.

leading to a reduced infant mortality rate, and an increase in the prevalence of children with profound and severe handicaps who survive at birth and live longer. This situation is similar to that of Kenya as discussed in UNESCO (1974). Recently, the United Nations estimated the number of handicapped individuals in Tanzania to be two million (Eklindh & Nchimbi, 1989). Of these two million, 160,000 are school-age children. In spite of an increase of special services for persons with handicaps in the last decade, the services are very limited as shown on Tables 1, 2, 3, and 4. Thus, only about 1% of the school-age children needing special education services are provided for. Furthermore, most special services are designed for persons with mild and moderate handicapping conditions. Thus, there is a great need for services for children with severe, profound and/or multiple handicaps.

Quality of Education

In addition to concerns about limited services provided, the quality of the available special education is also a matter of major consideration. This concern relates primarily to the curriculum, the educational materials used and the teaching methodology employed in special education programs.

Cultural and Religious Factors

Other factors having effects on the provision of special education from the start are the cultural and religious characteristics of the Tanzanian people. Tanzania has a population of approximately 24 million, composed of about 120 heterogeneous ethnic groups. Although there are no written accounts of the treatment of individuals with handicaps, oral history indicates that most of these ethnic groups, though differing in cultural practices, treated individuals with handicaps in the same way. In the past, individuals with handicaps were either killed or hidden from the public for most of their lives. Chowo (1978) in his survey of handicapped individuals in twenty-nine villages found that infanticide of children with handicaps was still taking place. A study by Sauter in 1978 also found that some families of children with visual impairments were still hiding them from the rest of the community. Over the years, the prevalence of extended families has made it easy for most families to hide their children with handicaps from the rest of the community as there has always been someone to take care of the child at home, e.g., grandparents and siblings. With the changing of Tanzanian society, as more people move to urban centres, therefore having to function as nuclear families, and siblings are required to attend school, most families have turned to residential special schools for help. Unfortunately, these schools have been used as a dumping ground by some parents who leave their children in these residential facilities even during school holidays. To discourage this tendency and to assist parents who are not financially able to afford transportation costs, the Tanzanian government has provided transport and escort services at the beginning and end of each school term, to and from student's homes. The establishment of a large number of special education units and home-based instruction is hoped to help solve this problem.

As indicated earlier, religious organizations were the first to provide education to individuals with handicaps in Tanzania. Although their efforts were commendable, they fostered dependency as they took the children away from their homes and provided for all their needs. This approach led to separation of the children from their families, and most parents relinquished their responsibility to those members of their families having handicaps. Complicating the attempts to integrate students with handicaps into the regular classroom is the fact that some associations of people with handicaps are resisting introduction of itinerant services which would enable students to attend their neighbourhood schools and live with their families. Feedback from some members of the itinerant team, the first and only itinerant team in Dar ea Salaam, indicates that itinerant teachers have had problems convincing parents to retain their children at home. The reason is that some families have been relying on hand-outs from charitable organizations, the itinerant program arrangement would make it more difficult for them to provide food, clothing and transport for their children.

Increased awareness of the nature of handicapping conditions and of the needs of persons with handicaps, particularly the needs of children, is evident through the rapid increase in the number of articles about disabled persons appearing in Tanzanian newspapers. These articles feature, in dramatic manner, the services currently provided and the discrepancy between these services and ideal conditions. Politicians have also demanded more services from the Tanzanian government (Daily Nation, 1988, 1989).

The Tanzanian Government has reacted by establishing units in regular schools for persons having handicaps (see Table 2). Most special education units are self-contained classrooms within regular school compounds, and are not integrated with the rest of the school. These units usually provide services for children having visual impairments or mental retardation. By 1989, the government had established 18 units for the blind and 17 units for individuals with mental retardation. There seems to be some integration of normal functioning students with students having visual impairments but none with children having mental retardation.

The Government of Tanzania has also acknowledged the needs of special children through the inclusion of a section about handicapped children in the 20 year education plan for the year 1981 to 2000 (Jamhuri ya Muungano wa Tanzania, 1982a). In the first volume of the 20 year plan, recommendations are provided on ways to meet the needs of handicapped children in Tanzania. These recommendations include the following.

1) Expansion of the current facilities according to the needs of each district.
2) Renovation of regular school facilities to make them appropriate for integration of students having handicaps.
3) Provision of more and better teachers for students with handicaps.
4) Development of a special education policy.
5) Supply of equipment and appropriate materials to facilitate provision of services according to the needs of each handicapping condition.
6) The formation of a special committee composed of personnel from the Ministries of Health, Education, and Social Services, to look into the needs of handicapped individuals.

The second volume of the 20 year plan of educational services for Tanzania provides brief explanations of the different handicapping conditions and the recommended educational services (Jamhuri ya Muungano wa Tanzania, 1982b).

Teacher Shortages

As was mentioned earlier, and with respect to the recent emphasis on provision of services to the handicapped, concerns have been expressed by Tanzanians about the quality of special education. Major concerns have been expressed about the quality of the teachers and the instructional practices employed in the facilities for persons with handicaps. The number of teachers with special training is small (see Table 6).

There is a shortage of teacher training facilities for special education teachers; only one college of education is currently offering specialized training. The number of students graduating from this college is also very small. Until recently, only 15 teachers of the handicapped graduated each year, five specializing in mental retardation, five specializing in hearing impairments, and five specializing in visual impairments. Between 1976, when the program was initiated, and 1988, 176 teachers graduated from this special education teacher training program. The program has currently been expanded to offer 51 places for special education teachers, 17 for each of the three specializations: mental retardation, visual handicap, and hearing impairment (Eklindh & Nchimbi, 1989 p.14). Although there has been an increase in the supply of special education teachers in the field, the number has not increased fast enough to meet the demand. In addition to a shortage of training facilities for special education teachers in Tanzania, teachers of the handicapped find it difficult to work in this field because of the shortage of facilities providing special education. Thus, the teachers are restricted to a few localities. For instance, married, female, special education teachers may not find a facility providing special education near where their husbands reside. Thus, these teachers may be forced by circumstances to revert to work in regular education classrooms.

Another factor affecting the number and quality of special education teachers is the lack of special education courses at the University of Dar es Salaam. This factor causes teachers interested in higher education to change their specialization unless they are

Table 6

Teachers in Special Education Programs for Children with Handicapped in Tanzania

Category	Special training	Regular teacher training	Total
Visual impairment	68	-	68
Hearing impairment	98	66	164
Mental retardation	21	30	51
Physical handicaps	-	13	13
Total	187	109	295

Source: Ministry of Education (1989) Basic Information About Special Education In Tanzania.

among the very few who obtain scholarships to study abroad. Regular classroom teachers with very limited special education training have had to supplement the teaching staff in special education programs for students with handicaps.

The curriculum and the evaluation procedures used in Tanzanian special education programs is also a concern as it is in most third world countries (Baine, 1988; O'Toole, 1989). The special education curriculum used in Tanzania is the same as that used in regular schools, with a few modifications (Institute of Education, 1984). Most of the instructional and assessment instruments and materials have been adopted from western countries without adapting them to the local context.

The focus of the present study was on the identification of the teaching methods used in the instruction of students with mental retardation in Tanzania. The following section reviews literature on instructional methods.

Instructional Methods

Introduction

There are several steps in the instructional process which precede instructional delivery and several steps which follow instructional delivery. Lefrancois (1988) identified important steps preceding instructional delivery as a) establishing goals, b) determining student readiness, c) selecting instructional strategies, d) collecting required materials, and e) planning for assessment and evaluation. He also identified the important steps that follow instructional delivery as a) assessing effectiveness of teaching strategies, b) determining extent to which instructional goals have been met, and c) reevaluating student readiness. The current study focused exclusively on the techniques of instructional delivery, for example, presentation of material, questioning procedures, and error correction, and not on the teaching processes that precede or that follow instruction.

Instruction consists of a deliberately arranged set of events, external to the learner, designed to support the internal processes of learning (Gagne, 1977, 1985; Gagne, Briggs & Wager, 1988). Instruction involves progress from one moment to the next as a set of events act upon and involve the student in a learning activity. Instruction constitutes a set of communications to a student with the sole aim of aiding the processes of learning, that is, getting students from one state of mind to another (Gagne, Briggs, & Wager, 1988). The type of instructional events presented should be related to the type of learning that is expected and thus should be derived from theories of learning. Instructional events, therefore, involve presentation of stimuli to support or facilitate the learner in the acquisition, maintenance and generalization of knowledge or skills. Stated simply, teaching is the process of imparting skills, knowledge, attitudes, and values (LeFrancois, 1988).

Knowledge about learning and instructional processes is a necessary prerequisite to the effective evaluation of instructional procedures. Following is a brief review of the components involved in the learning process and how they relate to instruction. Different models of instruction are presented and essential aspects of instructional delivery summarized.

Learning Strategies

According to Gagne, Briggs, and Wager (1988), learning is an internal process described as follows. First, a stimulus is received through sensory receptors. Of the myriad of stimuli bombarding the senses, only a limited number reach the short-term memory. Filtering of the stimuli to be acted upon is made possible through the process of selective perception of the stimuli reaching sensory receptors. The short-term memory acts as short-term storage. It is only through rehearsal that information is retained long enough in the short-term memory for encoding. Only information which is encoded reaches the long-term memory. The long-term memory acts as a structure for storing information for long durations.

The process of learning cannot be assumed until performance is evaluated. For performance to be possible, learned information must be retrieved from memory to assist individuals to act appropriately. Material learned may be retrieved directly from the long-term memory and passed directly to the response generator or the information may be held in the short-term memory if a combination of information is required before performance. This information is eventually transferred to the response generator and goes through the process of response organization which determines the response to be elicited. Performance leads to feedback which in turn leads to reinforcement (Gagne, Briggs and Wager, 1988; LeFrancois, 1988). The processes assumed to occur during any single act of learning are: attention, selective perception, rehearsal, semantic encoding, retrieval, response organization, feedback, and executive control.

Gagne (1988) identified the essentials of learning imperative for identification of the processes which cause slow learning. She also suggested ways of training those processes which are teachable. The elements Gagne identified as essential for effective learning are discussed below under four categories.

1. Strategies of Selecting Attention

   (a) Knowledge of learning goals affects distribution of attention and intensity of concentration (Reynolds, 1979).

(b) Individual differences in selective attention to content in learning. There is a developmental trend in the extent to which learners use attention strategies effectively, especially focusing strategies. Brown (1978), in a study of information processing, found that younger children were poor in identification of important information in passages.

(c) Individual differences in selective attention to feedback. Gagne (1988) found that students were more attentive to feedback when they made mistakes, than when the feedback involved only reinforcement.

2. Encoding Strategies

Various encoding strategies are listed below.

(a) Elaboration. Better elaborations and retrieval cues lead to more efficient encoding strategies. Deep processing, such as comprehension, application and synthesis of skills and processes, produces better recall. Research indicates that better learners generate more and better elaborations.

(b) Organization strategies. Organization strategies affect effective encoding of declarative knowledge. Organization strategies include clustering items and encoding spatial relationships.

(c) Study techniques and encoding strategies. In research studies of the effect upon recall of asking students to summarize information mixed results have been obtained. The importance of cognitive processes, such as analysis and application of concepts rather than just superficial outlining or summarizing was emphasized.

3. Conditional Knowledge

Knowledge of when to use a given learning strategy is essential for effective learning. There is a need for students to know the purpose for learning specific material in order to choose appropriate learning strategies. Data on when development of criteria for choosing appropriate learning strategies occurs is not known as most studies on learning strategies have been at high school and college levels rather than at preschool and elementary school levels.

4. Strategy Effectiveness Monitoring

There is a need for monitoring the effectiveness of learning strategies. Average and fast learners are more efficient than are slow learners in monitoring their strategies. Fast learners are better at focusing on unlearned elements. Faster learners are more accurate in determining whether more studying is needed.

One of the major ingredients for effective teaching is conducting the instruction at levels appropriate to the students. Factors necessary for deciding on the appropriate levels of instruction to use are discussed below.

Deciding on Levels of Instruction

To maximize the learning outcome, it is necessary to decide upon the appropriate level and type of learning and instruction. Taxonomies of learning and instruction are used to help teachers decide on the appropriate level and type of instruction to use. A learning and instruction taxonomy is a hierarchical classification system. In most educational taxonomies, the organizing principle is the complexity of student behaviour expected. Higher levels of taxonomies involve more complex student behaviour which is built on lower levels of the taxonomy. For example, if a student can perform a behaviour at level three of a taxonomy then he/she should be able to perform at levels one and two, on which level three is based.

Use of taxonomies in teaching. Taxonomies are useful in many aspects of the instructional process. For example, taxonomies can be used to determine learning objectives, instructional strategies, and evaluation questions and procedures. Orlich, Harder, Callahan, Kravas, Kauchak, Pendergrass, and Keogh (1985) identified the usefulness of taxonomies as including the following:

a) they provide a range of objectives, adding breadth and variety to a teacher's repertoire of objectives;

b) they help in sequencing objectives from simple to complex;

c) they reinforce learning as lower level skills are repeatedly reinforced during the process of learning higher level skills;

d) they provide a learning model which can be useful to students even outside the classroom;

e) they ensure instructional congruency by placing objectives at specific levels, which helps the teacher choose appropriate teaching strategies and questions;

f) they can be used to design appropriate test items congruent to the level used in the teaching;

g) they provide a model for lesson and unit planning by facilitating translation of ideas into effective lessons;

h) they can be used to diagnose learning problems by determining the levels at which students experience problems and educational experiences necessary to remedy specific learning deficits;

i) they can be used to individualize instruction;

and j) they can be used to assist instructional decision-making, for example, decisions on where learning leads and how much time is necessary for prerequisite skills.

Bloom's taxonomy. Bloom's taxonomy (Bloom, 1956, 1958) is one of the most commonly used classification systems for the cognitive domain. His taxonomy is hierarchical with six levels of learning. The six levels of Bloom's taxonomy, with the corresponding characteristic students' behaviours as discussed by Wolery, Bailey, and Sugai (1988) and Orlich et al., (1985), are discussed below.

1. Knowledge is the lowest level of the taxonomy which involves the students remembering, memorizing, recognizing, and recalling information. The knowledge level concerns the recall of specific information in the form it was originally presented. Baine (1982) identified three subcategories in the knowledge level as (a) knowledge of specifics, (b) knowledge of ways and means of dealing with specific facts, and (c) knowledge of the universals and abstractions of a field. Knowledge forms the basis of the other five levels of Bloom's taxonomy. In spite of the importance of the knowledge level of Bloom's taxonomy for acquisition of high levels of learning, it has been over-emphasized in regular classrooms without sufficient emphasis being placed on higher levels of the taxonomy. Therefore, teachers should ensure that the knowledge taught will be applicable at a later date (Mireau, 1985a).

2. Comprehension is a higher order of cognitive functioning than is knowledge in Bloom's taxonomy. Comprehension involves students in interpreting,

translating from one medium to another, extrapolating and describing in their own words. Comprehension, therefore, requires sufficient understanding of the information to be able to perform the transformations listed above. For students to be able to handle material at the comprehension level, students must have a knowledge base from which they can draw the information they process. Therefore, emphasis is placed on the transformation of information to more understandable forms (Crocker, Brokenshire, Boak, Fagan, & Ethel, 1980).

3. Application, the third level of Bloom's taxonomy requires students to engage in problem-solving, and applying information to produce some outcome. Application requires the ability to recall, select, and apply appropriate knowledge and skills to solve a novel problem. Students must therefore, be able to process information at the first two levels before they can engage successfully in the application level (Crocker et al., 1980).

4. Analysis involves students in subdividing and reintegrating content and materials. Given unfamiliar materials, students should be able to identify their elements and their relationship, arrangement and organization. Analysis includes the identification of stated and unstated assumptions, dominant and subordinate ideas, logical or illogical elements, facts from inferences, relevance from irrelevance, cause and effects, patterns, themes, philosophy, biases, and techniques. It is, therefore, necessary for a student to have skills involved in the first three levels of Bloom's Taxonomy before they can engage in analysis (Crocker et al., 1980).

5. Synthesis, the second highest level of the taxonomy involves creating a unique, original product that may be in verbal or physical form. Synthesis,

therefore, requires the use of pieces or parts of past experience to produce a new, unique, original or creative communication, plan or set of operations, and set of abstract relations. Ability to analyze past experience into pieces or parts is essential for the process of synthesis to occur (Bloom, 1958, cited in Crocker, 1980)

. 6. Evaluation is the highest level of learning, according to Bloom, and entails making value decisions about issues, and resolving controversies or differences of opinions. This level therefore involves judging something by internal or external evidence using given or recalled criteria (Bloom, 1956).

Gagne's hierarchy. Gagne and Driscoll (1988) discussed five major categories of learning outcomes. These five categories cut across subject matter areas. Following is a brief review of the categories.

1. Attitudes. As cited in Gagne and Driscoll (1988), Gagne defined an attitude as "an acquired internal state that influences the choice of personal action toward some class of things, persons or events". A wide range of attitudes can be identified as desirable educational goals. In demonstrating the range of attitudes involved, these authors identified three classes of attitudes: (a) social interaction attitudes include kindness to others; helpfulness and thoughtfulness of others' feelings, (b) positive preference for certain kinds of activities such as learning, classical music and science fiction books, and (c) citizenship. For example, desirable attitudes may be positive or negative. Desirable negative attitudes include the dislike of narcotic drugs (Gagne & Driscoll, 1988) .

2. Motor skills. Motor skills are learned in connection with common skills such as driving, playing musical instruments, athletic and sports activities and a

number of occupations. Most activities involve more than just motor activities. For example, in driving a car, a person needs knowledge of the rules, and an attitude of consideration for others in addition to the motor skills to make a good driver (Gagne & Driscoll, 1988).

3. Verbal information. This information can also be referred to as "declarative knowledge" or an "organized body of knowledge that we acquire"(Gagne & Driscoll, 1988, p.44). Verbal knowledge can be acquired through different means ranging from word of mouth to radio and television. Gagne and Driscoll (1988) identified verbal learning as being in four classes: names, facts, principles, and generalizations. Verbal information learning outcomes have to be stated in proposition or sentence form.

4. Cognitive strategy. Cognitive strategies "refer to the ways by which learners guide their attending, learning, remembering, and thinking. One's abilities to engage in these self-monitoring, self-guiding activities make possible executive control" (Gagne & Driscoll, 1988, p. 56). Cognitive strategies are important in education because they lead the student in the development towards becoming "self-learners" and "independent thinkers" (Gagne & Driscoll, p. 56). Cognitive strategies are hard to express because they refer to internal functioning of a person as opposed to acting on the environment as in the intellectual outcomes discussed next (Gagne & Driscoll, 1988).

5. Intellectual skills. Intellectual skills outcomes involve "knowing how" as opposed to "knowing what" in verbal information. Intellectual skills have subordinate forms which are hierarchical in nature. The lower levels are prerequisite to the higher levels. The hierarchy of intellectual skills includes the following levels, starting with the lowest level; a) basic forms of

learning - associations and chains, b) discriminations, c) concepts, d) rules, and e) higher-order rules (Gagne & Driscoll, 1988).

In summary, taxonomies are very useful in facilitating teachers' decisions on the levels and types of skills to test and teach. The use of taxonomic hierarchies should, therefore, be taught to all teachers in pre-training courses and reemphasized in in-service training programs.

Instructional Process

According to E. Gagne (1985) strategies of effective teaching include Management and instructional strategies.

1. Management strategies are strategies directed at keeping students engaged with instructional materials. Research in group management strategies indicates that successful teachers seem to have instructional characteristics not present in less effective teachers (Emmer, Evertson, & Anderson, 1980; Orlich, Harder, Callahan, Kravas, Kauchak, Pendergrass, & Keogh, 1985; Rosenshine & Stevens, 1986). Examples of research findings are presented below.

In studies of effective and ineffective teachers, observations were made from the beginning of the year. Students in the sampled classes started out at the same levels of achievement, however, by the end of the year, students in classes of the more effective teachers were more on-task and had higher achievement scores. Effective teachers, usually expert teachers who had taught for a while, were more organized from the first day of class, spent more time teaching the students the behaviourial norms of their classroom, and had more efficient ways of checking homework. However, ineffective teachers, who were usually beginning teachers, were deficient in these skills. To facilitate teaching of classroom behaviourial norms, a teacher should have a system of class management rules and routines. Examples of classroom rules and management include rules about when students can move around the classroom and routines for transferring from one activity to another. MacCannell and Young (1980) discussed the important rules and routines in achieving effective class management. In their observations, they found that effective teachers a) used rules and routines to reduce unnecessary interruptions, b) used a set of rules to move the materials or children, c) noticed when rules or routines are not working well and intervened, d) reminded students of proper procedures when necessary, and e) used class members to assist with the distribution of materials. Emmer et al.(1980) found that a teacher's behaviour in the first few weeks of school determined the discipline and achievement in the classroom for the whole year. The differences in the way ineffective and effective teachers began the year are summarized as follows.

Effective teachers	Ineffective teachers
-Were more organized.	-Were less organized.
-Did not allow interruption by the parents or administration.	-Allowed interruptions by parents and administration.
-Taught rules the first day of class and persisted with the rules for the first few weeks.	-Did not teach rules and those who taught were ineffective, i.e., used vague rules.
-Gave assignments and name tags the first day.	- Did not give activities or name tags on the first day.

2. Instructional strategies are directed at facilitating learning in ways other than through management. In addition to earlier findings, Emmer's

(1980) study showed that effective teachers differed from ineffective teachers in their instructional strategies. Effective teachers exhibited the following characteristics; a) clarity of presentation, b) monitoring students for understanding of presented materials, c) providing feedback, and d) using more review time and knowing where reviews were needed.

Orlich, Harder, Callahan, Kravas, Kauchak, Pendergrass, and Keogh (1986) characterized successful teachers as a) being well organized in planning, b) communicating effectively with their students, and c) having high expectations of their students.

Rosenshine and Stevens (1986) summarized their findings of the instructional processes used by effective teachers as follows.

Effective teachers:

> a) begin a lesson with a short review of previous, prerequisite learning;
> b) begin a lesson with a short statement of goals;
> c) present new material in small steps, with student practice after each step;
> d) give clear and detailed instructions and explanations;
> e) provide a high level of active practice for all students;
> f) ask a large number of questions: check for student understanding, and obtain responses from all students;
> g) guide students during initial practice;
> h) provide systematic feedback and corrections;
> i) provide explicit instruction and practice for seat-work exercises and, where necessary, monitor students during seat-work. (Rosenshine & Stevens, p.377)

Most of these behaviours are used by most teachers considered to be effective. These procedures, as identified by Rosenshine and Stevens (1986), are most applicable in teaching knowledge or skills that can be taught in a step-by-step manner and teaching processes or skills that students are expected to apply to new problems or situations. These instructional procedures are least applicable to unstructured subject matter, such as in creative writing. In addition to identification of characteristics important for effective teaching, several models of effective instruction have been constructed. Several of these models are discussed below.

Models of Effective Instruction

General Model of Effective Instruction

Rosenshine and Stevens' (1986) model of effective teaching has five stages. Stages of the effective teaching model are not fixed but are adjustable according to the subject matter taught and the age of students. The time spent on each of the stages varies according to the age of the children. For instance, in the lower grades, amount of material presented at any one time is small, with more time spent in guided student practice. Higher grade level students are presented more materials with decreased time for overt practice.

The five stages of Rosenshine and Steven's model are discussed below.

1. Review and check homework. This first stage of the model includes the process of checking homework, reteaching any materials not mastered from the previous lesson, reviewing relevant learning, and reviewing prerequisites for the concepts and skills to be taught.

Two purposes for daily review are (a) to provide additional practice and over-learning of previously learned material and (b) to allow teachers to provide corrections and reteach material if necessary. Different ways can be used in the review of the previous day's work such as giving quizzes at the beginning of class, asking questions, and writing summaries.

2. Presentation of new content/skill. Presentation of materials is a very important step in the instructional process. It is important for teachers to state the goals of the lesson, provide demonstration of new materials, use examples, and check student understanding before proceeding to the next point (Rosenshine & Stevens, 1986).

Demonstration of new skills and materials is an essential aspect of the presentation. All teachers demonstrate new skills and materials in most subject areas. However, more effective teachers spend more time in demonstration (Everston, Emmer, & Brophy, 1980). Results of a study on time spent by teachers in demonstration conducted by Good, Grouws, and Ebmeier (1983) favoured spending at least 50% of the instructional time in presentation and teacher guided practice. When a large amount of time is used in demonstration, the teacher can allow time for repetition of ideas, multiple examples, and sufficient instruction to allow students to complete their seat-work with minimal problems.

Another important aspect of the presentation stage is checking students' understanding of the skills or materials presented. The teacher monitors students' understanding through asking questions. Consistent errors indicate inadequate presentation and suggest the need for reteaching.

Rosenshine and Stevens (1986) identified four aspects of clear presentations as follows: a) Clarity of goals and main points including statement of goals or objectives of the presentation, focusing on one point at a time, avoiding digression, and avoiding ambiguous phrases and pronouns; b) Step-by-step presentation, consisting of presentation of material in small steps, organizing and presenting the material so that one point is mastered before the next point is given, giving explicit step-by-step directions, and presentation of an outline when the material is complex; c) Specific and concrete procedures involve modelling the skill or process, giving detailed and redundant explanations for difficult points, and providing students with concrete and varied examples; and d) Checking for students' understanding involves making sure that the students understand each point before moving on to the next point, monitoring students comprehension through asking questions, requiring students to summarize in their own words what has been presented, and reteaching parts of the presentation that students have difficulty understanding.

Quality and design of the instructional materials used in presentation have an impact on students' understanding and therefore should be taken into account. Although demonstration is common in many subject areas, it is rare to find demonstration in comprehension skills and higher level cognitive thinking. One also rarely finds teachers demonstrating how to answer high level cognitive questions although they frequently ask such questions.

3. Guided student practice and checking for understanding. Guided student practice is essential in the instruction process. Four features of this stage of instruction are discussed here. First, frequent practice is important as it leads to better achievement and learning. Studies on effects of practice indicate that effective teachers ask more questions than do less effective teachers. Second, performance of a high percentage of correct answers is important while practising new material. Brophy (1980) recommended an

80% success rate while practising new material while others have suggested a 95% success rate during review. Variables important for achieving automaticity are a) teaching new materials step-by-step to lessen the probability of errors and b) practising until overlearning occurs. According to Chaplin, (1985) overlearning can be defined as "learning in which practice goes beyond the criteria of learning" (p. 320). Third, checking for understanding is important at this stage so that correction and reteaching can be conducted when necessary. It is important to ask many question not only of those who volunteer but also of non-volunteers to check for understanding of all students. Asking if students have any questions is an inappropriate method to use since many students will not ask questions even when they do not understand materials presented. Fourth, the organization and conduct of practice is important. When working with small groups in primary grades, it is advisable to provide students with practice in ordered turns as it eliminates waving of hands and other behaviours intended to attract the teacher's attention. Although Mckenzie (1979) found student call-outs to be negatively related to achievement gains among high achieving students. Brophy and Everston (1976, cited in Rosenshine & Stevens, 1986) found student call-outs to be positively related to lower achieving students. Group choral responding is a useful method of providing teacher-led practice as it provides a greater opportunity for practice. However, there is a need to have an effective signal so that students can respond in unison.

4. Feedback, correctives and reteaching, if necessary. Rosenshine and Stevens' (1986) four types of students' responses to questions or task requirements are discussed below. a) A response can be correct, quick and firm; a teacher's reaction should be to ask further

questions in order to maintain the momentum or to give a short affirmative statement and continue. b) A students' response can be correct but hesitant. Teachers should provide such students with a short statement of feedback and further explanation of the process leading to the correct response. c) If a student's answer is incorrect and careless, a teacher should correct the response and move on. d) If a student's response is incorrect due to lack of knowledge of the facts or the process, which usually occurs in the early stages of learning, the teacher should give prompts or reteach the information or skill. Peer tutoring is a recommended way of reteaching the materials as peer tutoring benefits both the slow learner and the tutor.

5. Independent student practice. Independent practice is important for the integration of learning (unitization) and automaticity (Samuels, 1981). Independent practice is important for overlearning which is critical for learning hierarchical material. Hierarchical material is composed of tasks with hierarchical elements which require the learning of elements lower in the hierarchy in order to learn materials higher in the hierarchy. Overlearning allows the student to retain information which is subsequently used in higher levels of learning. Independent practice is usually conducted by having students do seat-work independently.

6. Weekly and monthly reviews. These reviews are essential for summative evaluation. Reviews will not be discussed in detail as they are not a focus of the present study.

Attention, Model, Prompt, Test Teaching Model

Baine's (1988) modification of the "attention, model, prompt, teaching model" developed by Becker, Engelmann, and Thomas (1971) can be used both for individual and group instruction. Baine (1988) discusses the following steps used in the "attention, model, prompt, and test teaching model" for group instruction:

(a) get individual or group attention,
(b) focus attention,
(c) model the task,
(d) repeat the model, as required,
(e) test and prompt,
(f) repeat test and prompt, as required, (fade prompts),
(g) test without prompts, and
(h) reward or correct as appropriate.

The four stages of the attention, model, prompt, and testing instructional model are discussed below.

1. Attention. It is necessary to gain and maintain attention to critical aspects of instruction throughout the instructional procedure. Verbal and gestural prompts may be used to gain and focus student attention. Attention may be enhanced by pre-teaching students to pay attention to features that will be important in the task that is to be taught.
2. Modelling. Once student attention has been gained, the teacher models the task. Modelling involves the teacher demonstrating the sequential steps in a task and focusing student attention on critical features of the performance. Tasks may be modelled several times. The number of demonstrations provided depends on the nature of the learners and the task.
3. Prompts. Prompts (assistance) are used during the early stages of instruction to assist students to perform tasks that they are not yet capable of performing without assistance. Following demonstrations of a task, teachers use prompts to assist students to imitate the teacher's

demonstration. Prompts are repeated as often as necessary with gradual fading of the prompts as the students become more proficient in their performance. Prompts are faded until students can perform a task rapidly, consistently, and accurately without the use of prompts (Baine, 1988). Four types of commonly used prompts are discussed below.

(a) Verbal prompts: verbal prompting involves giving additional instructions, emphasizing important words, giving single word reminders, pausing in speech to focus attention on something, and leading (in which the teacher leads the student in a verbal response simultaneous with the student response).

(b) Gestural prompts: gestural prompts are used if verbal prompts do not elicit the desired responses and are usually paired with verbal prompts. Gestural prompts involve pointing, tapping, tracing, signalling, and clapping to indicate to the student where, when, and how to respond. Verbal prompts are used either just prior to gestural prompts or at the same time as gestural prompts. For efficient use of gestural prompts, it is important to gain student attention, use the prompts consistently, be brief, and fade the gestural prompts before fading the verbal prompts.

(c) Modelling: modelling involves demonstration of tasks by teachers exactly as they expect the students to perform. Tasks must be demonstrated slowly enough to provide students enough time to see how each step in the sequence is performed. If the task involves a series of steps, the demonstration may be divided into parts. The student may learn to imitate each part of a skill separately before the whole skill is performed. Modelling prompts are faded through the use of gestural and verbal prompts.

(d) Physical prompts: there are four different levels of physical prompts. The use of full physical prompts involves the teacher physically moving the student through the motions required to complete the task. The second level involves reduction over several trials, of the amount of physical guidance given to the student. Students are provided assistance only for the parts of the task in which they need help. Next, the teacher may shadow or have her\his hands follow the motions of the task without touching the students. Finally, the teacher gradually fades physical prompts.

Students should be rewarded for proper performance to increase and maintain their motivation. Many handicapped individuals, especially those with mental retardation, have great difficulties in performing most tasks and therefore are rarely rewarded. Therefore, it is essential for teachers to reward students for successful task performance. Five types of rewards which can be used with students are discussed below (Baine, 1988).

(a) Descriptive praise: this is praise followed by an explanation of why students deserve praise. Descriptive praise should be provided both for performance and effort. For example, if a student is working quietly for an extended period of time, the teacher may say to him\her, "I like the way you are working quietly." Baine (1988) recommended this type of reward be used together with the other three types of rewards listed.

(b) Social praise: social praise involves actions such as smiling, nodding, shaking a student's hand, and putting a hand on a student's shoulder. Social praise should be paired with a description of the specific behaviour being rewarded.

(c) Social privileges: when students have performed well or worked hard, they may be rewarded with social privileges. These privileges may include visiting with the teacher, and playing with a favourite item. As in social praise discussed above, teachers should ensure that students know which specific behaviours are being rewarded.

(d) Food rewards: when other rewards are not effective, food rewards may be used. Food rewards are not recommended as they are not natural in many situations. Such rewards should, therefore, be used only when nothing else is producing the desired behaviour and should be paired with an explanation of the specific behaviour being rewarded.

(e) Token rewards: token rewards are a useful way of ensuring that rewards given to students have reinforcing value for the students. Tokens are given each time the teacher would like to give students rewards such as social privileges but cannot because it would cause disruptions to the learning activity. Descriptive praise should be given each time a token is given and students should have a choice as to what they would like to exchange for their tokens.

> Teachers should have a wide variety of rewards available for exchange for the tokens. Rewards used in exchange for the tokens must be things that are not easily accessible to the students.

Another model of instructional delivery referred to as the instructional events model is presented in Gagne, Briggs, and Wager (1988). This instructional delivery model is discussed next.

Gagne, Briggs, and Wager's Instructional Events Model

Gagne, Briggs, and Wager (1988) described nine instructional events critical for the learning process to occur successfully. Events of instruction must be deliberately arranged in most cases. The nine instructional events identified by Gagne, Briggs, and Wager (1988) are discussed below.

1. Gaining attention. Student attention may be gained either through the use of stimulus change, for example, using a moving display, or by gaining student interest, for example, by asking questions. It is easier to gain and maintain the attention of a student in individualized instruction than in group instruction, because it may require the use of different methods of gaining and maintaining attention due to individual differences.

2. Informing learners of objectives. It is crucial for learners to know the type and level of performance to be used as an indication that learning has occurred. Students must, therefore, be told explicitly in a language that they understand, what is expected of them. Stating objectives helps students to know when they have learned what the teacher had intended them to learn as well as keeping the teacher on target.

3. Stimulating recall of prerequisite learning. New learning involves a combination of old learning in new ways. It is, therefore, crucial for students to access

relevant, previously learned materials before new ideas are introduced. Learning is facilitated if previous relevant learning can be accessed quickly and without much effort. Teachers can facilitate student recall of relevant, previous learning by asking them recall or recognition questions on the topic.

4. Presentation of stimulus material. Stimuli to be learned must be communicated in the form that will be expected for performance. If a teacher neglects to present stimuli in the appropriate media, a skill different from the objective may be learned. For example, if the teacher's goal is responding to verbal instruction, using printed materials during the instruction process would not be appropriate. Stimuli presented may have emphasized features that determine selective perception. It is crucial when teaching concepts and rules to present a variety of examples to facilitate learning.

5. Providing learning guidance. Learning guidance involves the use of communications (e.g., the use of questions and prompts) which lead students to discover the answers to a question for themselves. The aim of this process is leading students to discover the information for themselves rather than supplying students with the correct answer. The amount of hinting or prompting, for example, verbal and physical prompts, depends on the kind of learners and the task or material being learned.

6. Eliciting performance. At this stage, students demonstrate their first performance of a task after learning. Students should be presented with the same stimuli as were used in the initial learning process before they are presented with different but similar new stimuli used to generalize their learning.

7. Providing feedback about performance correctness. Although in many instances feedback is provided automatically, many tasks involved in school learning do not provide automatic feedback. Teachers must, therefore, provide feedback for students about correctness of performance.

8. Assessing the performance. Teachers need to assess students' performance repeatedly to raise the reliability and validity of their observations. The purpose is to gain an accurate assessment of student learning. Assessment of performance may be conducted informally as well as formally.

9. Enhancing retention and transfer. Learning must occur in a meaningful context to enhance retention. The information learned should be embedded in a context which provides cues for retrieval. For example, students who are learning to dress and undress should be taught at an appropriate time. Appropriate time to teach dressing skills would be removing boots, coats, mittens and hats as the students enter the classroom in winter, and putting this clothing back on when it is time to go home in the afternoon. For enhancement of transfer, performance of a newly learned skill should be required in different contexts such as learning to feed oneself in school, at home and in a restaurant.

The last model of effective instruction discussed in this section is a model of instructional sequencing presented by Baine (1982).

Baine's Four Phases of Instructional Sequencing in a Single Lesson.

Baine (1982), when discussing sequencing of instruction in a single lesson, identified four phases: teaching, practice, generalization, and maintenance. These four phases are incorporated in lesson design. Each of the four phases is discussed below.

Phase 1: Rehearsal and pre-training. Phase one incorporates rehearsal and pre-training in preparation for acquisition of new skills. In this phase, a teacher teaches readiness skills, helps focus attention and motivates students. The phase may involve a few seconds, a whole day field trip, a film, or an experiment to provide an experience to which students can relate. During rehearsal, there is a review of previously learned skills which are components or prerequisites to the skills to be learned or which are necessary for making discriminations in later learning. Readiness skills such as sitting, listening to the teacher, attending to materials and recalling skills prerequisite to the next skill are practised and reinforced until the desired level is reached. Rehearsal is usually short in duration although it depends on the nature of the task and the learner. Intermittent verbal reinforcement is used in rehearsal as well as in all the other phases of Baine's instructional sequencing model. The reinforcement and pace of instruction in the four phases vary according to the purpose of each phase. The pace also varies according to the nature of the task.

Pre-training involves advance training of one or more responses in preparation for major skills training later in the lesson. An example of its use is when there is a difficult Stimulus-Response link or when a new object label for later discrimination training is taught as an introduction. The pace of a pre-training session is slower than that of a rehearsal.

Phase 2: Acquisition and generalization. This phase involves acquisition and generalization of skills or processes. Acquisition consist of learning new S-R links, chains, concepts, rules, and/or problem solving. In this phase, it is important for the teacher to give assistance to minimize errors and maximize learning. The assistance is then faded as the new skill is mastered.

In the past, there was an assumption that newly learned skills automatically transferred to different environments (generalization). This view has, however, changed and it is now recommended that specific techniques for generalization be included in instruction, especially when one is teaching handicapped students. As Baine (1982) put it, "The purpose of generalization training is to teach the learner to use a newly acquired response under conditions that differ in non-essential ways from those of the instructional environment" (p 81).

Phase 3: Maintenance. This phase is concerned with the ability of the learner to maintain an acceptable rate and style of response under normal conditions following the termination of instruction. Maintenance is trained by requiring rehearsal of a response after successfully longer periods of time.

Phase 4: Review. This phase includes a review of responses learned earlier in the same lesson. This is the assessment of short-term maintenance.

Use of Questions in Instruction

The importance of questioning as an aspect of instruction and learning has been expressed in the literature (Frager, 1986; Orlich et al., 1985; Stowitschek, 1984). Frager, Orlich, and their colleagues also found that effective use of questioning by teachers and students was closely related to success of educational goals. In spite of disagreement among educators and researchers on the ways in which questions should and are used in the classroom, there are some benefits of appropriate use of questioning which are agreed on. The commonly accepted benefits of the use of questions include: a) development of higher level thinking skills; b) improvement of learning from texts; c) verifying the learning process; d) motivating students; and e) aiding teachers in planning lessons (Frager, 1986)

Thus, questioning is a very important part of instructional delivery.

Question Classification Systems

The presence of many differing views about the ways questions are used and should be used in classrooms has led to the development of a large number of strategies. Following is a discussion of well known question classification systems as presented by Frager (1986), under four categories. The first class includes hierarchical systems which are non-context bound. An example of this classification system is Huskin's (1972), questioning strategies and techniques evaluation instrument. This instrument was intended to provide teachers and students with an instrument for improving their question asking skills. The questioning instrument uses Bloom's taxonomy and the idea of question function. The question functions discussed include (a) centering (centering students' thinking on a point), (b) expanding (raising thinking to higher level) (c) distributing (working with data), and (d) ordering (classroom management).

The second classification type is the context-bound hierarchical question classification system. An example of this approach is the system used by Guszak (1967) for reading groups, developed through studies of questions used by teachers. Like Frager, he also formulated a hierarchy from studies of basal readers closely resembling Bloom's taxonomy. His categories included recognition, recall, translation, conjecture, explanation, and evaluation. The third type of question classification system is a non-context-bound non-hierarchical question classification system. An example of this classification is Hyman's (1979) strategic questioning. This system is based on the method used for verification of "truth claim" of response to a question. Hyman's categories include a) definitions, b) facts, c) relationship between facts, d) opinions, and e) justification of opinions. These five categories are viewed as interacting with a) inductive and deductive approaches, b) response clues like yes\no, or selection type question construction, and c) production type.

The fourth type of question classification system includes context-bound, non-hierarchical question classification systems. An example of this type is Clement's (1961) system for art teacher/student questioning. This classification has 10 distinct and easily identifiable categories based on when the question occurs in a lesson. Some of the categories are past experience questions, planning questions, opening questions, and process recall questions.

Deciding on Use of Questions

Questions are widely used at all levels of classroom instruction. For example, Gall (1970) found that elementary school teachers used an average of 348 questions per day while Clegg (1971) found that secondary school teachers used an average of 395 questions per day. The type of question used tended to be at the lower levels of Bloom's taxonomy. For example, Hunkins and Davis (1966) found that fifth grade textbook questions were 87% knowledge level questions, 9% comprehension level questions and 4% application level questions. Of the 732 questions analyzed there were no analysis questions; only one question required synthesis, while only two questions were at the evaluation level.

Classification of questions helps teachers evaluate the cognitive or affective level of the questions used. This information allows teachers to adjust to the students' developmental level.

Guidelines for Using Questions

As questions are widely used in regular classrooms, it is essential to look at some of the recommendations found in the literature for question use. Stowitschek (1984) provided the following guidelines to improve teacher questioning.

1. Ask one question at a time.
2. Wait for a response. Allow enough time for students to formulate their answers.
3. Correct student errors consistently and immediately.
4. Praise frequently and give positive feedback when student responses are correct.
5. Evaluate the questions. Are they properly worded? Are terms used within the student's vocabulary?
6. State questions as clearly and concisely as possible.
7. Avoid random questioning. Plan when and with whom questions are to be used.
8. Avoid rephrasing question as a matter of course. Rephrase questions in response to student errors or misinterpretation only.
9. Do not rely exclusively on questions requiring only "yes" or "no" answers.
10. Challenge students' correct answers on occasion.
11. Do not limit instructional objectives to recall and memory questions if the aim is problem-solving.
12. Use age-appropriate language when questioning adolescents and adults.
13. Ask questions that are specific, relevant, and directly related to the curriculum and

instructional materials being used.

14. Make the objective of the question clear to the student. (Stowitschek, 1984)

These guidelines seem to be representative of the important points about the use of questions made by various authors, such as Frager (1986); Orlich, et. al. (1985); and Stowitschek (1984).

In addition, Orlich, (1985) has identified the following as teacher appropriate-questioning behaviours. First, teachers should use appropriate question framing behaviour. A teacher should ask a question, pause, then call on a student to answer. This teacher behaviour ensures that all students attend since the teacher can call on any of the students. The pause after a question or the "wait time" gives students time to prepare their responses to questions. Waiting time is important for all questions and particularly for taxonomically higher level questions. A pause also gives the teacher time to read the nonverbal cues made by students. For example, the students may show confusion if the question is not well understood. Rowe (1974) found that teachers tended to be impatient especially with weaker students. Rowe also found that pausing after a student's reply produced longer responses and more student questions.

The manner in which teachers respond to students' replies is important in determining students' subsequent behaviour in volunteering information. A student who receives a negative response may refrain from responding in class. Such teacher reaction to a student's response may have a ripple effect. Orlich, et al. (1985) recommended that teachers use positive prompts to elicit complete answers from students who supply incomplete answers and to elicit answers from those who do not reply. Orlich and colleagues recommended that teachers should be cautious and positive while handling incorrect responses. Alternatives for handling incorrect responses in a positive or neutral manner include rephrasing the question or asking a similar question that is less difficult.

Orlich and colleagues also discussed the importance of promoting multiple responses. Questions which require multiple responses are usually divergent or evaluation questions. Such questions promote student-student interaction and force students to pay attention to all replies. Another issue identified as important in classroom questioning is encouragement of non-volunteers to respond to questions. Many classrooms have a group of students who always volunteer. Teachers should make an effort to break this practice by maintaining a positive approach towards non-volunteers, and, at times, teachers may give these students a question beforehand to prepare them for participation. Orlich and colleagues warn against the use of questions as punishment.

In addition to identifying appropriately used questions by teachers, Orlich and colleagues also identified teacher behaviours which may interfere with smooth verbal interaction in the classroom. These behaviours are listed below:

1. repeating questions;
2. repeating all student responses;
3. answering the question;
4. not allowing a student to complete a long response;
5. not attending to the responding student; and
6. always selecting the same student respondents (Orlich et al., 1985).

In summary, the use of appropriate level questions and questioning procedures plays a significant role in effective teaching. Appropriate questioning procedures and the use of appropriate level questions do not come automatically to a teacher but have to be learned.

Another important factor in instructional delivery is the differentiation between group and individualized instruction. The use of group instruction is discussed next as most of the programs to be studied use this mode of instruction.

Use of Group Instruction

Group instruction is most suitable when the responses required are verbal. However, even in cases where physical responses are required, group instruction may be used. The size of the group is usually contingent on the ability of the teachers and the pupils to comply with the conditions previously discussed. The size of groups in special education group instruction is usually between 2 and 12 students. For example, Tanzanian, segregated, special education classes hold a maximum of 10 handicapped students while a maximum of five handicapped students are placed in each integrated class. Since all the students are the responsibility of a single teacher, group instruction is widely used.

Advantages of Group Instruction (Baine, 1982, 1988; Gagne, 1988) are discussed below.

1. Some types of skills are learned as fast in group instruction as they are in individualized instruction.
2. Choral responding allows easy and rapid identification of individual difficulties, through failure to respond or incorrect responding.
3. Each student receives more practice opportunities through choral responses as compared to individualized instruction.
4. Group instruction is more economical because the teacher deals with more students.
5. Students who acquire skills earlier may be used as models for those who need assistance. This

procedure provides more practice for the slower students and reinforcement for the model.

6. Group instruction also facilitates the teacher in focusing on appropriate behaviour rather than on paying attention to incorrect behaviour which may reinforce the behaviour. For example, a teacher may praise a child in the group who is displaying an appropriate behaviour and direct other students' attention to him/her while ignoring inappropriate behaviour.

Conditions necessary for group instruction include: a) possibility of delivering instruction within a relatively small area in which performance can be continuously monitored; b) ability to provide appropriate assessment, feedback, reinforcement, assistance and correction quickly and effectively; and (c) students must be able to perform in unison so that an evaluation of each child's performance is possible.

Summary of Literature Review on Instructional Delivery

A review of the literature on instructional delivery indicates that there is a wide variety of instructional models applicable to teaching handicapped individuals. Certain aspects of the instructional process seem universally accepted as essentials because they were found in most of the models of instruction. Following are the common aspects of the instructional process.

The introductory stage involves preparing a learner for the lesson. This phase involves pre-teaching of some important aspect of the material to be presented, reviewing of prerequisites, focusing attention of the students on the lesson to follow, stating the purpose of the lesson and motivating students to learn the skill or material to be taught. For example, in teaching children to feed themselves using spoons, teachers may teach the children to scoop the food into the spoons, and the hand movement to the mouth separately before teaching the whole skill. For focusing attention and motivating students, teachers could use natural events in the community, such as birth of a calf, hatching of chicken eggs or germinating of millet (used in making local brew in some areas of Tanzania) to stimulate students' interest and focus attention on the important aspects of the lesson to be taught. Different media such as diagrams, film strips, and pictures may also be used to maintain students' attention throughout a lesson.

The second stage is an input stage in which the teacher presents new skills or material to students. Important aspects of this phase are the way or method and the amount, level, and order of the material presented. For example, the amount of material presented to younger students and other students with short attention spans should be much less than that presented to older students. Taxonomically, the level of material presented should be appropriate to the mental capability of the students. Students with high mental capability can cope with information and tasks which are in the higher level of Bloom's taxonomy (analysis, synthesis and evaluation) while students with low mental capability may only be able to cope with information and tasks at the lower levels of the taxonomy (knowledge, comprehension and application). Knowledge and skills should be presented at the lower level of the taxonomy before they are presented at higher levels. It is also essential for students to be able to perform tasks at lower levels of the taxonomy before information and tasks of higher levels of the taxonomy are presented if students are to gain understanding of the higher level information. Thus, appropriate sequencing of presentation of information and tasks is essential for meaningful learning. Teachers also need to use a variety of instructional methods such as demonstration, lecture, media, discussion, field trips and visits, and games, to maintain student motivation. Other important factors which affect the input of material are the clarity of presentation, which may be affected by factors such as a teachers' voice and language, and the enthusiasm of the teacher.

Teachers also need to present information in a way that ensures the use of encoding strategies which maximize maintenance of the information and tasks taught. Important encoding strategies include the provision of better elaborations and retrieval cues to students. Students must also be provided with conditional knowledge so that they can decide on the appropriate time to use strategies and information taught. Conditional knowledge is the knowledge of conditions under which specific learning strategies should be used. In addition, students need to be taught ways of monitoring the effectiveness of the strategies they use and ways of adapting them to new situations. For example, if students have learned to solve two-digit addition problems, they should be taught to monitor how often they correctly solve problems, using the strategy taught and adjusting the strategy used if it does not produce correct answers most of the time. If a strategy proves to be effective, the students should be helped to discover other situations under which the strategy can be used and to use the strategy in such situations.

The third important aspect of a lesson is the continuous monitoring of effectiveness of instruction and evaluation of whether the material presented has been mastered and maintained by the students. Teachers may use questions to monitor student understanding of the material presented. The type of questions asked should reflect the objective of the lesson and be at an appropriate intellectual level. This means that the teacher's questions can be easily used to identify her\his objective for teaching the lesson and that questions presented to students with low intellectual capability should require low intellectual processing while those questions presented to students with high intellectual capability should require high intellectual processing. Teachers should also deal with students' responses in a manner which promotes positive interaction patterns in a classroom. For example, a teacher can ask other students to react to an answer provided by one of the students. Each student contributing should give a reason for his/her evaluation of the answer. Teachers in this way can help students develop positive communication among themselves. Monitoring student performance helps teachers make decisions as to whether to continue to the next stage or to repeat the lesson in whole or part.

Guided practice is important for maintenance of skills or material taught. Teachers use prompts and feedback to elicit appropriate behaviour from students. To effectively conduct guided practice, teachers should use appropriate questioning techniques, such as distributing questions among all students giving an opportunity to those who are too shy to raise their hands, asking questions at different levels of Bloom's taxonomy, and giving students time to think about answers.

Another important aspect which affects instructional delivery is classroom management skills of teachers. Teachers' classroom management techniques include using classroom rules and routines and methods of responding to misbehaviour in the classroom. Classroom rules include such rules as: students should not take other students personal property without prior consent of the owner, while classroom routines include how materials to be used in a lesson are distributed, and how students are to leave and enter classrooms before and after recess. The presence of rules and routines which are well understood by the students and which teachers enforce, reduces distractions (affecting students or the instructional process) during instructional delivery. In addition to the presence of rules and routines, the way teachers react to misbehaviour determines its effects on instructional delivery. For example, teachers may decide to make low-key responses to students' misbehaviour in order not to draw other students' attention which would distract instruction. Some low-key teacher behaviours include eye-contact with the misbehaving student, use of facial expression to show dissatisfaction to the misbehaving student, use of gestures, pausing mid-sentence to draw the students' attention, moving close to the student, touching the student, and minimal verbal responses can be used to make the student aware that the teacher is conscious of the misbehaviour. If a students' misbehaviour is causing distraction, such misbehaviour should be stopped quickly without over-dwelling on it. Reduction of distractions to the instructional delivery process facilitates efficient use of instructional time.

Presented next is a list of essential aspects of effective instructional delivery identified from the literature on general instructional procedures.

Essential Aspects of Effective Instructional Delivery

1. Gain and maintain student attention, for example through the use of interesting media.
2. Review related, previously learned information (through asking questions, quizzes, and summary).
3. Reteach parts of previous lessons identified as necessary through activities carried out in #2 above.
4. Provide motivation for learning skills or

information by:

   - a) making statements that predict students will enjoy the lesson,
   - b) promising external rewards, and
   - c) reminding students about later requirements such as tests.

5. State the goals of instruction. Goals should be stated at the beginning of the lesson, with a clear statement of what the lesson will accomplish and what students are expected to learn.
6. Demonstrate or model the skills to be learned or the use of materials to be used (the amount of time used in demonstration, number of repetition, and use of multiple examples are important factors).
7. Elicit performance (use prompts to elicit performance from students. Types of prompts used, such as physical gestural, and verbal prompts, and the fading of prompts are important for learning).
8. Check student understanding through questions (important aspects include questioning techniques used, level of questions on Bloom's taxonomy as well as how teachers frame questions).
9. Reteach information or skills if necessary, for example, when students make consistent errors.
10. Ensure clarity of presentation, for example,
    - a) focus on one point at a time,
    - b) avoid digression,
    - c) avoid ambiguous phrases and pronouns,
    - d) step-by-step presentation, and
    - e) present information in the form in which performance is expected.
11. Provide guided practice:
    - a) provide frequent practice (evidenced by the number of questions asked by teachers),
    - b) require a high percentage of correct answers (to

help students achieve automaticity),

c) practice until over-learning occurs,
d) ask questions of all students,
e) use choral group responses, and
f) use ordered turns in guided practice for small groups.

12. Provide appropriate feedback and, corrections to student responses:
    a) for a correct, quick, firm student response, teachers should give a quick affirmation and continue;
    b) for a correct but hesitant student response, teacher should give short statement of feedback and further explanation;
    c) for an incorrect but careless student response, teacher should provide correct response and continue with the lesson; and
    d) for an incorrect student response due to lack of knowledge of facts or of the process, teachers should use prompts and reteach.
13. Use of reinforcement and rewards:
    a) types of rewards used,
        (i) descriptive praise,
        (ii) social praise,
        (iii) social privileges,
        (iv) food rewards, and
        (v) token rewards.
    b) Reinforcement schedule used;
        (i) continuous reinforcement,
        (ii) fixed interval,
        (iii) variable interval,
        (iv) fixed ratio, and
        (v) variable ratio.
14. Use of context of instruction which enhances retention and transfer (a variety of relevant

environments should be used for instruction to enhance retention and transfer).

15. Independent practice should be provided; such practice should be relevant and aimed at overlearning which leads to automaticity of skills and maintenance.
16. Classroom management is important. The following aspects of classroom management are important:
    a) presence of rules and routines which are well understood by students,
    b) presence of consequences for non-compliance to rules and routines, and
    c) teachers' consistent monitoring of rules and routines and the consequences for non-compliance.

Instruction of Children with Mental Retardation

The major population of focus in this study is teachers of children with mental retardation. To be able to evaluate instructional methods used by these teachers, it is essential to identify the common characteristics of students with mental retardation and the instructional practices appropriate for them. The following section discusses the educational characteristics of mentally retarded students and their instructional requirements.

Conceptualization of Mental Retardation

There are two views of mental retardation which affect the type of treatment and education that persons with mental retardation receive. These two views, the qualitative and quantitative views of mental retardation, are discussed below.

1. The quantitative view of mental retardation looks at children with mental retardation as being essentially the same as non-retarded persons in development (Zigler, 1973). The only difference between the two groups is that those with mental retardation are slower in development. This view of mental retardation has led to

the use of the label "developmentally delayed" for this population. Thus, instructional procedures for the average child are considered to be applicable to children with mental retardation if used at a lower rate. Taking this view exclusively has the danger of believing that the only change in instructional delivery for mentally retarded students is to present information or skills at a slower rate. Presenting regular education materials to students with mental retardation at a slower rate and repeating them without other modifications does not work, which leads to the need to use different techniques. Luftig (1987) supported this statement by asserting that individuals with mental retardation require specialized learning environments with specialized materials and sequences.

2. The qualitative view of individuals with mental retardation is that they are "radically and functionally different" from intellectually average children (Luftig, 1987 p.8). Hence, since the difference between children with mental retardation and non-handicapped children is viewed as being more than a quantitative difference, instructional processes which work for one group cannot work for the other (Borkowski & Wanschura, 1974; Campione & Brown, 1977; Ellis, 1979).

Therefore, the quantitative view of mental retardation may lead to services which are inappropriate for students with mental retardation if qualitative differences which exist between these handicapped students and the non-handicapped students are ignored. Taking an exclusively qualitative view of mental retardation may lead to inappropriate services for students with mental retardation if the similarities between such handicapped and non-handicapped students are ignored. An exclusively qualitative view may also lead to segregation of students with mental retardation. Due to the essentially harmful effects of using any one of these two views exclusively, Luftig (1987) advocated an eclectic approach for teachers of children with mental retardation. Thus, teachers should realize that although children with mental retardation are similar to non-retarded children in many aspects, they demonstrate significant deficits in the way they process, organize, learn, and remember information (Campione & Brown, 1977; Ellis, 1979). Special education should, therefore, involve more than slowing down instruction.

According to Luftig (1987) children with mental retardation have unique learning characteristics. These characteristics are described in the discussion that follows.

Learning Characteristics of Retarded Learners

1. Difficulty in learning is one of the most obvious characteristics of retarded learners. They learn at a significantly lower rate than do intellectually average students. The lower rate of learning may be attributed to their learning and memory characteristics. Problems in learning and memory may be explained by attentional deficits. Research has shown that retarded learners as a group have a) a narrower breadth of attention, meaning that they do not attend to as many stimuli as do average learners (Zeaman & House, 1979), and b) they do not differentiate relevant and irrelevant task dimensions (Lovaas, cited in Luftig, 1987). This implies that instruction for retarded learners needs to be planned to minimize the stimuli by removing all irrelevant stimuli and through helping students identify and focus on relevant aspects of tasks.

2. Learning and spontaneous use of learning strategies. Retarded learners are poor in learning and using learning strategies. Students with mental retardation possess both mediational and productive

deficiencies (Flavell & Wellman, 1977). Having a mediational deficiency means that a child has not learned proper strategies for acquiring information, while having a production deficiency implies that the child has learned strategies for acquiring information but cannot use the strategies spontaneously. The term strategies means procedures used in processing pieces of information and solving problems (Luftig, 1987). Strategies are used to organize information to be learned to facilitate learning and retrieval of this information later when need arises. This implies that educators of retarded learners have to actively teach these students to organize information for easier learning and retrieval.

3. Memory. Retarded learners perform poorly on memory tasks (Brown, Campione, Bray, & Wilcox, 1973; Butterfield & Ferretti, 1985). Luftig (1987) suggested that memory deficits in mentally retarded students might not be due to lack of biological equipment needed to remember, but rather to lack of requisite memory strategies needed to remember effectively since most deficits in memory of the mentally retarded respond to training. For example, retarded learners do not seem spontaneously to rehearse, cluster items in categories, or recognize patterns of items to be remembered. However, when given training, they develop the skills needed and improve in memory tasks. This improvement implies that teachers of retarded learners need to build in activities for training retarded students to rehearse, to categorize items and to recognize items to enhance their memory.

4. Generalization and transfer of learned information and skills is a problem for most individuals with mental retardation. They need to be helped to see similarity and differences between two problem situations and to generalize learned knowledge and skills to new problems. Teachers of retarded students should,

therefore, provide training of generalization and transfer of skills\information, and provide situations in which students can practice these skills.

5. Language problems are frequent among individuals with mental retardation. This prevalence of language problems in the mentally retarded is unfortunate because of the crucial role language plays in cognitive development (Piaget, 1952; Piaget & Inheider, 1969). Children with mental retardation are deficient in sentence complexity, length of speech, sound discrimination and the number of nouns in their vocabulary. Dale and Cole (1988) found that direct instruction, which uses highly structured presentation of material with frequent responses and reinforcement, led to gains on early language development and basic language concept tests. In addition, they found that mediated learning programs, which relied on students' intrinsic motivation to promote cognitive competence, led to greater verbal and memory scale gains and increased length of utterance. Direct teaching and mediated learning practices should be used to improve students' language. The prevalence of language problems among students with mental retardation implies that their teachers have to use very simple language and short sentences to facilitate students' understanding during instructional delivery.

Information Processing of Individuals with Mental Retardation

A general model of how information is processed was discussed previously. In this section, the differences between the information processing of individuals with mental retardation and intellectually normal functioning persons is described and the implications for instruction of children with mental retardation are discussed.

The first stage in information processing involves input of stimuli to be processed. Input of information is normally through the five senses. However, in instructional situations, the use of visual and auditory input modes is prominent. The prevalence of sensory impairments is higher among individuals with mental retardation than it is in the general population (Bensberg & Sigelman, 1976) which may compound problems of mentally retarded students (Lloyd, 1973). However, individuals with mental retardation do not differ in iconic and echoic memory. Iconic memory is the first visual impression of a stimuli on the eye, which lasts for only a few seconds, while echoic memory is the corresponding brief auditory sensation in one's ear.

The next stage of information processing involves the central processor. This stage involves the processing of information which was acquired in the input stage. This stage determines what information will be learned since selection of information to be retained for further processing occurs here. This stage is also central to what will be remembered and what will be discarded. Effective learning requires that individuals discard irrelevant materials and process relevant ones. As mentioned earlier, retarded learners have problems identifying relevant and irrelevant stimuli. Luftig (1987) identified the following four behaviours which teachers\students must engage in to ensure relevant information is processed by retarded learners (initially discussed by Zeaman and House, 1963, 1979).

1. A student must maintain a sufficient level of arousal in order to attend to stimuli. If arousal level is too low the student will not attend to stimuli, while if arousal is too high the student will be too excited to maintain attention for long enough on a stimulus to learn.
2. The performer must scan the entire field of

available stimuli, decide upon the relevant stimuli, and attend to these stimuli.

3. In addition, the performer must constantly make decisions about what constitutes relevant stimuli, and attend to different sets of stimuli as relevancy dimensions change.
4. Also attention must be maintained over extended periods of time (Luftig, 1987).

Children with mental retardation tend to focus on interesting but irrelevant information. Therefore, since they have problems with selective attention, teachers should a) highlight important information and present it in salient ways, and b) remove or reduce irrelevant materials and information. Three techniques for directing attention towards important information suggested by Zeaman and House (1963, 1979) are listed below.

1. Reward attention to relevant information while selectively not rewarding attention to unimportant information.
2. Try to make relevant information novel and interesting. Present the materials in a variety of highly interesting ways and restrict it to short durations as children tend to get bored after about ten minutes.
3. As you plan the lesson, decide on the most relevant aspects of the lesson and present them as forcefully as possible while keeping distracting and irrelevant aspects to a minimum. Most of the important information should be presented at the beginning of the lesson when attention is highest.

The next step in information processing involves the storage of information in the short-term memory. The short-term memory, also known as working memory and primary memory, has two limitations. First, it can only take a maximum of seven to nine pieces of information at a time and secondly, the information is retained for only 30 seconds in which time it has to be processed or it is forgotten. For information to be retained longer in the short-term memory, it has to be rehearsed at which time it is learned and placed in long-term memory.

Children with mental retardation tend to have problems both in organizing chunks of information for recall, and in rehearsing information. These children, in most cases, do not organize information but try to remember it in the form in which it is presented. This tendency restricts the amount of information they can remember. Students with mental retardation do not typically rehearse materials. However, when taught how to organize information categorically, their tendency to spontaneously organize materials and rehearse, and short-term memory performance increases significantly (Baumeiser & Brooks, 1981).

Luftig (1987) has identified a number of techniques which may improve short-term memory. The techniques are listed below.

1. Present materials categorically. Categories used should be meaningful and relevant to the students.
2. Practice and drill material in categorical learning. Categorical learning is learning that involves categories of items. This practice and drill should include having students group and categorize items.
3. Encourage and require students to recall information categorically.
4. Encourage students to rehearse the information. For example, students should be encouraged by being provided with information and an opportunity to rehearse it.
5. Allow students to manipulate objects physically into possible categories.

The next step in information processing is the learning process which involves learning and retention of the materials processed in short-term memory. Gagne (1977) identified eight different types and levels of learning: a) signal learning, b) stimulus-response learning, c) chaining, d) verbal associations, e) discrimination learning, f) concept learning, g) rule learning, and h) problem-solving.

Individuals with mild and moderate mental retardation have no problem learning levels a) to d) of Gagne's hierarchy but have great difficult learning levels e) to h) (Cherkes-Julkowski, Gertner, & Norlander, 1985). Therefore, educators should include levels e) to h) of Gagne's hierarchy in the curriculum and avoid overuse of the first four levels (a to d) at the expense of the highest four levels (e to h). To ensure that children with mental retardation are provided with the discrimination learning, concept formation, rule learning, and problem-solving experience, they should initiate the instructional strategies listed below.

1. Focus on the central dimensions of concepts. Since concepts contain attributes, some of which are critical and others that are not, teachers of children having mental retardation must organize and highlight critical aspects of concepts.
2. Adjust to changes in crucial attributes as a function of the situation. For example, emphasize the most relevant aspect of a concept for the context in which it is being used.
3. Use concrete examples. Since most individuals with mental retardation can only cope with information at the concrete level, which involves what they experience through their five senses (Ginsburg & Opper, 1969), it is imperative to present concepts as concretely as possible.

4. Teach the concepts needed to learn new rules. Teachers need to ensure that students understand the concepts in a rule before they present the rule to students with mental retardation. For example, for students to cope with a rule that all the materials not being used in the lesson should be placed on the right hand corner of their desks, they have to have the concept of the "right hand", "corner", and "desk" in their repertoire (Luftig, 1987).

In addition to Gagne's types of learning, operant and observational learning are other types of learning affecting instruction of students with mental retardation. Operant and observational learning and their application to instruction of retarded learners are discussed next.

Rewarded responses are increased or strengthened while those not rewarded are weakened and extinguished (Skinner, 1980). Luftig (1987) suggested that teachers should keep in mind some practical applications of operant conditioning. These practical applications are listed below.

1. Use positive reinforcement to strengthen desirable behaviour while at the same time ignoring inappropriate behaviour.
2. Use a planned schedule of reinforcement. This means that a teacher decides on the type of reinforcement as well as conditions under which reinforcement will be given. Teachers should plan the schedule of reinforcement to be used in every instructional situation and adhere to it. Schedules of reinforcement include continuous (reinforcement after every correct response), fixed ratio (reinforcement after a fixed number of responses), variable ratio (vary number of responses before reinforcement), fixed interval (students are

reinforced after a fixed amount of time, e.g., every five minutes) and variable interval reinforcement (students are reinforced on a variable time basis, e.g., the reinforcement may be provided after 1, 3, 6, 2 minutes, providing on the average one reinforcement every three minutes).

3. Reinforcement should come after the desired behaviour, not before. If the reinforcement comes before, students have no reason to engage in the behaviour.
4. In the beginning of a behaviour modification program, reinforcement must follow immediately after the behaviour. This type of reinforcement leads to the pairing of the reinforcement with the behaviour leading to strengthened behaviour.
5. Use a programmed systematic approach to reinforcement, which involves setting behavioral objectives which are reinforced with each approximation.
6. Reinforce even slight approximations of the desired goal behaviour, instead of waiting for perfection before reinforcing. Teachers should reinforce successive approximations (Luftig, 1987).

Observational learning is the type of learning in which skills or behaviours are acquired by imitation of behaviour of others (Bandura, 1969, 1977, 1978). Observational learning produces learning after watching a model exhibit the behaviour and imitating the model's actions. Observational learning is essential when skills have to be performed correctly on the first trial. Four processes necessary for successful observational learning are listed below.

1. Attentional processes. The model must gain the attention of the learner and interest the learner enough to cause the learner to selectively focus on

the actions while not attending to other stimuli.

2. Retention processes. The learner processes the model's behaviour and remembers it using rehearsal strategies. Rehearsal strategies are ways used to practice and remember what has been observed, for example, describing out loud a model's actions.
3. Motor production processes. The learner overtly imitates the behaviour of the model and receives feedback on the accuracy of the imitation attempt.
4. Motivational processes. If the student receives reinforcement for imitation of behaviour the probability of imitating behaviour increases.

Children having mental retardation are typically sensitive to models (tend to imitate models more than do intellectually normal children) and often rely on external cues. These children, therefore, are good candidates for observational learning (Turnure, Larsen, & Thurlow, 1976). Guidelines for increasing the probability of students with mental retardation learning from observation learning are presented below.

1. The model has to gain the attention of the learner. Novelty and variety are attributes of a good model.
2. The model should possess high status with the learner. A high-status model is a model who is held, by the learner, in a position of importance and thus whose behaviour is desirable.
3. If a model who is viewed as a high status individual displays an inappropriate behaviour it will be imitated. Therefore, teachers should ensure that high status models exhibit desirable behaviour.
4. Teachers should help learners interpret the behaviour observed since a strong component of observation learning is memory and retention. Teachers can help students interpret what they have

observed through discussion of modelled behaviour immediately after observation. For example, teachers can discuss, with adolescent students with mental retardation, the steps involved in preparing bananas for cooking after they observe a local housewife preparing bananas for cooking.

5. Teachers should give individuals time to practice what they have observed.
6. Teachers should convey to the students the importance of continuing with performance of modelled behaviour. Students will not continue to perform modelled behaviour unless they have a reason for doing so. Provide positive reinforcement and teach learners to self-reinforce for appropriately modelled behaviour.

The different types of learning, such as observational and operant learning should be used where appropriate to provide variety in methodology and more effective instruction.

Long-term memory: After information is learned, it is essential to retain it and be able to retrieve it when necessary. Retarded learners have problems in organizing material in the long-term memory for retrieval (Bray, 1985; Spitz, 1973). Therefore, teachers need to help these learners organize the information learned for more efficient retrieval from the long-term memory. Guidelines for teachers in helping students with mental retardation organize information for retrieval from long-term memory are presented below (Luftig, 1987).

1. A repetition of 50% (50% repetition is used to refer to repeating problems or tasks twice on a single practice period on a work-sheet) is suggested for optimal organization, learning and memory as repetition of presented materials influences organization and learning. For example in providing

practice with 50% repetition on decoding functional words, the following list can be used:

stop, go, danger, poison, danger, go, stop, poison.

2. Prompting, underlining, or other highlighting should be used to aid organization of information for long-term memory. For example, in helping students to learn new words in a paragraph, such words can be underlined or highlighted.
3. Change as few characteristics of the presented stimuli at a time as possible. For example, the first letter in the following words can be changed in learning Kiswahili spelling " paka," "taka," "saka," "zaka," and "daka". These words mean "cat" or "paint," "want" or "garbage," "search," "tithe," and "catch" respectively.
4. Simultaneous visual and auditory presentation seems to facilitate organization and learning. For example, teachers should show a labelled object or picture of the object while sounding words.
5. Information presented must be meaningful and relevant for the learners to aid recall. Students should be presented with information which is relevant to the context in which they live. For example, information about the types of bananas grown in the Kilimanjaro region and their varied uses would be meaningful and relevant to students in that region. Such information would also be recalled easily since it is useful in their everyday life.
6. Give direct assistance in arranging in chunks categorically organizing of material to the learners. For example teachers should show students how the information they are presenting can be

categorized for recall. For example when required to recall the following list of items;

table, shirt, chair, bananas, kanga, bed, yams, arrowroot, and dress,

the students can be given practice in categorizing them into;

a) Furniture: table, bed and chair.
b) Food: bananas, yams, and arrowroot.
c) Clothing: shirt, kanga and dress.

7. Allow opportunity to practice memory strategies such as rehearsal. Teachers should provide feedback and positive reinforcement when students display appropriate use of strategies.
8. Over-learning and frequent use of skills\information is essential to remembering. Teachers should provide activities which provide students with opportunity to use skills and information previously learned and stored in the long-term memory; otherwise such information, if not used for extended lengths of time, will not be remembered when needed. (Luftig, 1987)

In summary, students with mental retardation possess characteristics which make it difficult for them to learn, retain and retrieve information. These problems can, however, be reduced by use of effective instructional strategies. The literature on instructional characteristics of students with mental retardation indicates that the aspects of effective instruction identified earlier are applicable to instruction of students with mental retardation. However, a greater emphasis has to be placed on a) attention gaining and retention techniques, b) organization of materials presented to facilitate retention and retrieval, c) metacognitive strategies which help students to learn how and when to use strategies spontaneously, and the importance of rehearsal to retain materials in working memory long enough to process it.

Essential Aspects of Instructional Delivery to Students with Mental Retardation

Specific aspects of instruction essential in the instructional delivery of students with mental retardation are listed below.

1. Teachers should control stimuli presented to students with mental retardation to accommodate their narrow breadth of attention, e.g., through presentation of skills or information in small steps.
2. Teachers should control stimuli presented to eliminate irrelevant dimensions of tasks as students with mental retardation have difficulties distinguishing relevant from irrelevant aspects of information or tasks.
3. Teachers should provide instruction on strategies for acquiring information.
4. Teachers should teach conditions under which each learning strategy should be used.
5. Teachers should provide activities which will enhance acquisition of skills or information. For example, for each item taught teachers should provide students with training on how to rehearse, to categorize items and to recognize patterns.
6. Teachers of students with mental retardation should make explicit the similarities and differences between situations to facilitate transfer and generalization, e.g., through constantly using previously learned information and showing their students similarities and differences to novel situation.
7. Teachers should use simple, short sentences in

instruction and clear enunciation as well as identifying the nouns in their students' vocabulary so that the nouns can be used. These are important aspects of instruction of students with mental retardation because of the prevalence of language problems in this population.

8. Important aspects of material presented should be highlighted while reducing irrelevant information.
9. Teachers should reward attention.
10. Important aspects of information or tasks should be presented in novel and highly interesting ways.
11. Teachers should present the most important information at the beginning of the lesson when attention is highest.
12. Information and skills should be presented categorically to facilitate memory.
13. Practice or drill information categorically.
14. Teachers should require students to remember in categories.
15. Provide students with concrete categorization experiences.
16. Teachers should provide different types of learning:
    a) Gagne's types of learning in Baine (1982) :
        (i) signal learning,
        (ii) stimulus-response learning,
        (iii) chaining,
        (iv) verbal associations,
        (v) discrimination learning,
        (vi) concept learning,
        (vii) rule learning, and
        (viii) problem-solving.
    b) Observation learning:
        (i) present appropriate models, e.g., high status models;
        (ii) teachers should discuss modelled behaviour

and help students interpret it;

(iii) Teachers should emphasize to the students the importance of continuing to maintain modelled behaviour.

c) Operant conditioning:
   (i) important to use positive reinforcement,
   (ii) use a planned schedule of reinforcement,
   (iii) continuous reinforcement,
   (iv) fixed and variable ratio reinforcement,
   (v) fixed and variable interval,
   (vi) initially reinforce immediately after behaviour as this leads pairing of behaviour with the reinforcement, and
   (vii) reinforce small approximation if necessary.

17. The following aspects of instruction are essential in the instruction of students with mental retardation due to prevalence of problems with long term memory.
   a) Provide 50% repetition (meaning information or tasks are presented twice on a single practice period on a work-sheet)
   b) Prompting, underlining, or other highlighting should be used to aid organization of information for long-term memory.
   c) Change as few characteristics of the presented stimuli at a time as possible.
   d) Simultaneous visual and auditory presentation seems to facilitate organization and learning.
   e) Information presented must be meaningful and relevant for the learners to aid recall. Students should be presented with information which is relevant to the context in which they live.
   f) Give direct assistance in chunking and

categorically organizing of material to the learners. For example, teachers should show students how the information they are presenting can be categorized for recall.

g) Allow opportunity to practice memory strategies such as rehearsal and provide feedback and positive reinforcement when students display appropriate use of strategies.

h) Teachers should provide students with opportunity to use skills and information previously learned and stored in the long-term memory, otherwise such information if not used for extended lengths of time will not be remembered when needed (Luftig, 1987).

The lists of essential aspects of instructional delivery identified through literature review of general instructional delivery practices (see pp. 53-56) and the instructional delivery practices of students with mental retardation (see pp. 71-74) were used in the construction of the special education instructional delivery observation instrument (see Appendix A and B).

In the present study, classroom observations were conducted in the evaluation of teachers' instructional delivery procedures. Literature on the use of classroom observation for teacher evaluation is reviewed in the next Section.

Classroom Observation for Teacher Evaluation

After the identification of the essential components of instructional delivery, it was important to review appropriate teacher evaluation procedures before constructing the observation instrument to be used in the current study. The focus of teacher evaluations and the evaluation methods have changed over time due to the change in purpose of conducting evaluation (Mireau, 1985a; Travers, 1981). For example, learning was initially viewed as the responsibility of students, while teachers' responsibilities were viewed as the management of the classroom environment. With time, change occurred in which teachers became responsible for student learning to the point where teachers got promotion and pay according to students end-of-year performance (Travers, 1981).

Historically, teacher evaluation has changed from being totally subjective to the evaluation of student performance and most recently to the assessment of teacher characteristics using more objective teacher evaluation methods. Observation methods are used widely in teacher evaluation and were used in the present study.

Observation is a common everyday event. However, it is necessary to use more than casual observation if one is interested in the use of observation for compilation of data to be used for research and decision-making. Observation for teacher evaluation has to be conducted systematically.

The following discussion focuses on the general characteristics of observational research, the use of observation methods in teacher evaluation and common errors in these procedures. The next section focuses specifically on the characteristics, uses, advantages and guidelines for the use of specific observation methods used in the present study.

Use of Observation Methods for Teacher Evaluation

There are several steps necessary for any type of teacher observation. The following steps have been identified by Cartwright and Cartwright (1984) as essential in any observation.

First, the purpose of the observation has to be determined. An observation conducted without knowledge of the purpose may yield data which is useless as it may focus on irrelevant material and omit essential aspects of events. The observer, therefore, has to be well informed about the purpose of the observation and the record keeping practices. The purpose of the observation determines what is observed, where the observation occurs, when it occurs, and how it is recorded (Cartwright & Cartwright, 1984; Evertson & Green, 1986). It is, therefore, important to have a well defined purpose right from the beginning of any observation exercise.

Second, it is crucial to determine the type of record to be used. The type of recording used must be matched with the purpose of the observation to be appropriate for the intended purpose. In general, the more time spent in the preparation of an observation instrument the less time will be required in the analysis of the data (Cartwright & Cartwright, 1984).

Systems of Recording and Storing Observational Data

A large number of systems for the categorization of observational data collection instruments are available in the literature. For example, Rosenshine (1971) identified a categorization system based on the amount of observer inference required with the use of the instrument. He defined two categories, a) a low inference category including checklists and other systems using counting in recording and b) a high inference category using rating systems requiring observer judgements. Evertson and Green (1986) also identified four broad categories of recording and storing data. These categories are discussed in more detail below.

1. Category systems. Category systems including categorical data, checklists and rating scales are closed systems and deal with preset categories. These systems are appropriate for recording samples of behaviours, events and processes that occur within a given time. In category systems selected behaviours are coded on a

specially prepared form using tallies, numeric representations, and ratings. These systems are used with the goal of studying a wide range of classrooms to obtain normative data, to identify laws of teaching and to generalize across cases. Category systems are most appropriate when individual variations are not of interest to the researcher (Evertson & Green, 1986).

2. Descriptive systems include structured descriptive analysis systems which may have preset categories but are open to additions. In descriptive systems, meaning is viewed as context specific. Behaviours prior to the observations are taken into account and the observations are conducted in the natural settings with natural boundaries. Having natural boundaries for behaviours implies that they are performed as they would be in the normally acceptable manner in the natural setting. Selected behaviours are recorded using verbal symbols. For example, if in an English speaking community, normal conversational English would be used for recording observations. Records may include multiple aspects of the behaviours and consider broad segments of the events. Descriptive systems may be used with videotape or audiotapes. The goal in the use of descriptive systems is to obtain detailed descriptions which can be used to generate generalizations (Cartwright & Cartwright, 1984; Evertson & Green, 1986). For example, detailed descriptions of language used by students with mental retardation may be used to make generalizations as to what words or parts of speech are easily acquired by individuals with mental retardation.

3. Narrative systems are usually open systems with no preset categories such as specimen records, diaries, and anecdotal records. Narrative systems are used to sample behaviours that occur within naturally occurring boundaries. The method of recording used is recording of

broad segments of events orally or in written form. The language used to record the observation is everyday language. The goal in the use of narrative systems is to understand a specific case and to compare findings across cases.

4. Technological records are also open systems with no preset categories such as still pictures, videotapes, and audiotapes. Of interest to those using these systems are samples of behaviours and events which occur within a given time or in a given event. Technological records include records of all behaviours and events that are recordable by camera or microphone. The researcher can make the focus either wide or narrow according to his\her biases. The major goal in the use of technological systems is to obtain a permanent record of events, freezing the event in time for later analysis.

Sources of Error in Observational Research

Although observational research can never be totally objective and free of error, there are a large number of sources of error which a researcher can avoid through conscious effort. Evertson and Green (1986) have provided a detailed list of possible errors in the use of observational research in teacher evaluation. The errors they discussed are presented below.

1. Central tendency is the tendency of a rater in rating scales to rate all items and individuals in the middle of the rating scale. Such a rater avoids the use of extreme ends of a scale even when such ratings represent the most appropriate rating.
2. Leniency or generosity errors involve a rater who always rates items higher than they should be rated.
3. Primacy or recency effect. An observer's first impressions may affect his/her ratings of a

teacher's competence.

4. Logical errors are observer errors in judgement based on an observer's personal theoretical, experiential, or commitment inclination.
5. Failure to acknowledge self involves the failure to recognize the role played by the observer. The observer's biases influence what is perceived, where the observation occurs and how and what is recorded.
6. Classification of observations. Although wide categories permit quantification of behaviours or events, they may lead to loss of fine distinctions.
7. Generalizations of unique behaviours may occur incorrectly if an unrepresentative sample is used. An unrepresentative sample can lead to false conclusions or incorrect classification of people and events.
8. Nested interests or values of the observer Observational data may be value-laden or distorted due to personal bias.
9. Failure to consider the perspective of the observer may lead to unvalidated factors, processes or variables being identified.
10. Unrepresentative sampling of behaviours may cause wrong conclusions. If general, group behaviours which are infrequent or inconsistent are unrepresented, wrong conclusions may be reached.
11. Reactions of the observed. Awareness that one is being observed may lead to a change in behaviour, thus, not eliciting normal behaviours in the situation.

12. Failure to account for the situation or content such as considering situation 'A' as equivalent to situation 'B' when they are not functional equivalents may lead to incorrect conclusions.
13. Poorly designed observational systems may cause problems of validity and reliability.
14. Lack of consideration of speed of the relevant action. Errors in conclusion may occur due to omission of crucial features of the observed phenomena due to the fast pace of classroom activities.
15. Lack of consideration for simultaneity of relevant actions. More that one action or message may be sent at once or a message may have multiple functions. If there is failure to record the simultaneity of these events incorrect conclusions may be arrived at.
16. Lack of consideration of the goal-directed nature of human activity. One may reach the conclusion that a behaviour lacks stability if he/she fails to consider the purposes which the behaviours may have.
17. Failure to insure against observer drift. Observers change over the time of observation which may lead to change in criteria for rating or categorization (Evertson & Green, 1986 p.183).

Mireau (1985a) gave some tips for classroom observation for the purpose of data collection. He advised that an observer should, a) choose a sitting position from which he/she can observe all the activities of interest, b) be as unobtrusive as possible to avoid distracting students or the teacher, c) gather data fervently to ensure he/she gets all the necessary information, and d) stay for the whole lesson.

Checklists, rating scales, and anecdotal records, the specific observation instruments used in the present study, are discussed in greater detail below.

Checklists

Checklists contain preset categories in which only specified behaviours are recorded; hence, not all behaviours are recorded. Checklists are essentially a classroom observation system used as events unfold. Checklists are amenable to recording smaller units of behaviour which require low inference. Observations recorded through the use of checklists can be either time or event based. When tallies are used the number is not necessarily related to the length of the observation period. Hence, checklists provide an efficient way of recording presence or absence of behaviour during an observation period. Checklists are usually composed of a list of statements of behaviours expected during an observation. Therefore, appropriate use of checklists occurs when the behaviours to be exhibited are known and when there is no need to know the frequency (Cartwright & Cartwright, 1984; Chase, 1978; Evertson & Green, 1986). Checklists have the advantage of facilitating rapid recording of a great number of behaviours. The statements on the checklist should be in the order that they are expected to occur or, if that is not possible, they should be arranged in alphabetical order to facilitate fast recording. Another advantage of checklists is that essential behaviours cannot be forgotten since behaviour is identified and written down ahead of time. Behaviourial objectives of a study, when clearly written, can easily be converted to statements in a checklist, rendering the development of checklists easy (Cartwright & Cartwright, 1984).

Guidelines for Use of Checklists

In spite of the fact that these guidelines were written for observation of students in a classroom, the following apply for any use of checklists (Chase, 1978).

1. Identify objectives to be evaluated.
2. Construct a list of clearly observable behaviours that will be evidence of having achieved the objective.
3. The list developed should include the most common mistakes or negative behaviours if clearly identifiable.
4. Arrange items on the checklist in the order in which they are likely to be observed.
5. Provide a simple marking process, with instructions on its use. For example, sequential events may be marked by numbering each step in the sequence as it is observed while other items may only require noting their presence or absence (Chase, 1978, pp. 159-161).

Rating Scales

Rating scales, similar to checklists, are used with preset categories and when the behaviours to be exhibited are known in advance. However, rating scales go beyond checklists by requiring judgement of the frequency and quality of specific behaviour characteristics. Rating scales are normally used at the end of an observation period to summarize cumulative direct observations and do not have to be completed in the observational setting. In the use of rating scales, time is irrelevant except for the time between observation and assessment which should be short to avoid forgetting. Rating scales are amenable to high inference constructs such as teacher warmth, and require the observer to be detached enough from the action to have time for making judgement (Cartwright & Cartwright, 1984; Evertson & Green, 1986).

The advantages of rating scales in recording observation data include a) direct observation of specific and clearly stated dimensions of behaviour, b) common ground for comparing individuals on similar behaviours and c) potential use by many people at the same time to rate the same individuals on the same behaviours and thus facilitate inter-rater reliability (Cartwright & Cartwright, 1984).

Cartwright and Cartwright (1984) also discussed, in detail, the steps in developing rating scales. They identified two major components necessary for developing rating scales as a) a list of the dimensions of behaviour to be rated and b) the scales that will be used in rating. The authors also identified four types of rating discussed below.

1. Constant alternatives scales. These types of scales use the same set of alternatives to rate every dimension of the behaviour of interest. Constant alternatives may take different forms of descriptors. For example, "always, sometimes, and never" or "good, fair, and poor," or numerical rating such as the use of 5-1 for a continuum of behaviour, from seldom to always or poor to excellent.
2. Changing alternative scales. These scales use different sets of alternatives to rate different dimensions of the same behaviour.
3. Numerical rating scales. These are also a type of constant alternative scale. An observer circles or checks the number representing the degree to which a behaviour is present.
4. Simple graphic rating scales are scales in which a line is drawn with points along the line identified. An observer can make a mark anywhere along the line. If the descriptors used to identify the points on the line are the

same, this type of scale can be a type of constant alternative scale (Chase, 1978).

Guidelines for Rating Scales

Chase (1978) provided guidelines on the use of rating scales for observations of students. Some of these guidelines apply to teacher evaluation observation.

1. Rating statements must be composed of observable outcomes.
2. Rating scales should contain both positive and negative statements.
3. Steps across the rating continuum should represent changes in quality in a single dimension only.
4. Definitions of the scale continuum should be in as objective terms as possible.
5. Rating scales should reflect the most essential elements of a task, and hence be kept short (Chase, 1978, pp.165-166).

Anecdotal Records

Anecdotal records or critical incident reports are records of anecdotes or a brief account of some event that happened. Anecdotes recorded should be of behaviours relevant to the objective of the observation and should be factual description of the incidents that have been observed. Clear, concise language should be used to record the anecdote as soon as possible after it has been observed. Any interpretation or judgements should be delayed until an appropriate time to avoid errors resulting from observer bias. Anecdotal records are usually made by a person in the setting who is in a position to observe directly and should be used for unanticipated behaviours, incidents or events. Very minimal preplanning is possible in the use of anecdotal records for observation: therefore, a lot of work is required in interpretation of the data (Cartwright &

Cartwright, 1984; Evertson & Green, 1986).

Guidelines for Anecdotal Records

Chase, (1978) also identified the guidelines for anecdotal records as listed below.

1. Plan ahead what behaviours will be observed.
2. Limit anecdotes to descriptions of the actual events that occurred.
3. Record events as soon as possible after they have been observed.
4. Limit one anecdote to one specific event.
5. Record both negative and positive incidents of the relevant behaviours (Chase, 1978, pp.169-170).

In summary, the use of observation in teacher evaluation research was discussed. Advantages and sources of error in observation research were outlined. Three types of observational instruments used in the present study, rating scale, checklist, and anecdotal data were discussed in detail and guidelines important in their use listed. In constructing and using the observation instrument in the current study the following essentials of observation research were considered.

1. First, it is important to determine the purpose of the observation instrument. In the current study the purpose was the exploration of instructional methods used by teachers in programs for students with mental retardation in Tanzania.
2. Second, determination of the type of recording system appropriate for the data to be observed was essential. The checklist, rating scale, and anecdotal data were identified as the most appropriate recording system for the data in this study. Use of low inference as well as high inference instruments was preferred,

providing objectivity while providing the chance of evaluating the behaviours observed. Use of technological records, audio cassette, was preferred to provide a permanent verbal record of teacher classroom behaviour which would be available later for scrutiny if necessary.

3. Third, the seventeen sources of error in observational research, identified by Evertson and Green (1986) (see pages 78-80 of the thesis) were considered and avoided through the use of an objective, operationally defined observational guide. In the conducting the observation these sources of errors were consciously avoided.
4. Fourth, the observer should be as unobtrusive as possible while conducting the observation. The observer in this study was seated at a position where she could observe all class activities without moving around.
5. The guidelines identified for the use of each of the three observational recording systems are also essential and were considered in the construction and the use of the instrument in recording observational data.

In this section, a literature review on methods of observation with special emphasis on the instruments used in the current study was presented.

In this chapter, a literature review on instruction, particularly the components of effective instruction, and methods of observation with special emphasis on the instruments used in the current study was presented. The next chapter presents the research problems focused on in the current study.

CHAPTER II

STATEMENT OF THE PROBLEM

Statement of the Problem

Supervision of instructional procedures and improvement of teachers' instructional skills have been identified as a priority by the Supervisory section of the Ministry of Education in Tanzania. However, the instructional skills possessed by special education teachers are rarely evaluated. Area Education Supervisors are responsible for supervision of both regular and special schools. However, only a few classroom observations are conducted due to shortage of supervisors. These classroom observations are conducted by individuals without special training in education of students with handicaps. Msengi (1985) emphasized the important role special education supervisors in the Tanzanian educational system can play in improving the quality of teaching, particularly for handicapped students in regular classrooms. Due to the scarcity of evaluation of teacher in special education programs, there are few records of instructional procedures used by teachers in special education programs in Tanzania. Therefore, it is impossible to evaluate whether effective instructional procedures, as identified through studies of teaching in developed countries, are being applied in special education programs in Tanzania. Thus, there is need for exploratory research to identify the instructional skills utilized by teachers in special education programs in Tanzania. In addition, there is also a need to determine whether the instructional skills identified as essential in developed countries are also considered to be essential by special education experts and teachers in Tanzania. The individuals considered as special education specialists or experts in the present study are the lecturers teaching courses in special education at the University of Dar es Salaam, special education curriculum developers at the Institute of Curriculum Development in Dar es Salaam, and the personnel in charge of special education programs for students with mental retardation at the Ministry of Education head office in Dar es Salaam. Special education teachers in the present study include any person actively involved as a teacher in special education programs in Tanzania for at least two years regardless of professional qualifications.

Purpose of the Study

The purpose of this study was a) to develop an observation instrument appropriate for identification of instructional delivery practices in special education programmes in Tanzania, and b) to use the observation instrument developed in identification of the instructional delivery practices of teachers in special education programs in Tanzania. The observation focused primarily on group instructional processes used in special education programs in Tanzanian schools. Input of Tanzanian special education specialists and teachers was sought regarding the appropriateness of the observation instrument that had been developed.

Research Questions

The following research questions were used to guide the study.

1. Do special education specialists in Tanzania think that the same methods of effective instruction, as presented on the instruments, are suitable for both Tanzania and North America?
2. Alternatively, do the specialists recommend addition, subtraction, or modification of the observation checklist items to adapt the Western based observation checklist to the

Tanzanian context?

3. Do teachers of students with mental retardation in special education classrooms in Tanzania think that the same methods of effective instruction are suitable for both Tanzania and North America?
4. Alternatively, do the teachers recommend addition, subtraction, or modification of the observation checklist items to adapt the Western based observation checklist to the Tanzanian context?
5. Do teachers of students with mental retardation in special education classrooms in Tanzania use appropriate instructional methods based on and adapted to the Tanzanian context by special education specialists, and special education teachers of students with mental retardation?
6. Does the observational instrument identify specific areas of instruction requiring improvement? That is, does it indicate the need for in-service training of several teachers and/or the need for prescriptive feedback to specific teachers?

CHAPTER III

METHODOLOGY

Sample

The sample for this study included fifteen teachers from seven programs in Tanzania providing special education services to students with mental retardation. As indicated in Table 7, five teachers were drawn from two residential special school programs, Mtoni special school and Bethlehem school, for students with mental retardation. Eight teachers were drawn from four special education units providing educational programs for individuals with mental retardation in Tanzania. Two teachers were drawn from the only totally non-residential special school in Tanzania, Sinza Rehabilitation and Education Centre.

The teachers included in the sample for the observation using the developed instrument had varying amounts and types of teacher training and experience. Table 8 shows the teachers' training and their experience both in the regular classroom and in special programs for students with mental retardation.

Condition of classrooms and availability of teaching materials in the classrooms observed. The facilities and the teaching aids available in the observed programs varied greatly according to the type of program. The three special schools had better facilities than did the special units. All three programs were housed in new, well maintained buildings which were wheelchair accessible although only the day-school had students with severe physical handicaps. The two special schools which were residential had excellent residential facilities and personnel to care for the students.

The special education units were housed in the regular school establishments and had much poorer facilities than did the special schools.

Table 7

Category, Name of School and Number of Teachers in the Sample

Category	Name of school	Number of teachers in the sample
Residential special school.	Mtoni	2
	Bethlehem	3
Non Residential special units.	Uhuru special unit (Dar es Salaam)	3
	Wailes special unit	3
	Kisarawe special unit	1
	Uhuru special unit (Arusha)	1
Non-Residential special school.	Sinza Maalum (Rehabilitation and & Education centre)	2
Total		15

Table 8

Training and Experience of Observed Teachers

Teacher ID	Teacher Training	Regular class Experience	Special class Experience
a	CSE*	5	7
b	CSE	10	3.6
c	E&C of MR*	0	5
d	E&C of MR	0	5
e	DSE*	6	4
f	RT*	14	2.3
g	DSE	8	2
h	RTT*	6	5
i	DSE	6	2
j	RT	25	2
k	RT	9	2.7
l	CSE	8	4
m	DSE	8	6
n	DSE	11	3
o	RT	19	4

Regular class experience: Range= 0 to 25 yrs Mean= 8.87
Special class teaching experience: Range= 2 to 7 Mean=3.84

Abbreviations

*CSE: Certificate in special education from outside Tanzania. These were mainly taken in Finland.
*E&C of MR: Education and care of the Mentally Retarded. A course taken by two Catholic sisters who were previously nurses.
*DSE: Diploma in Special Education from Tabora Teachers college
*RTT: Regular and Technical Teacher Training
*RT: Regular Teacher Training

Some of the rooms in which the units were run had no doors or windows but iron bars to keep intruders out. However, these bars did not keep out wind, dust and sometimes rain which could ruin wall displays. All the observed programs had desks for each student, a table and chair for the teacher, and cupboards with locks for storage of teaching materials. The teachers had a variety of teaching materials available for both students' and teachers' use. All teachers also had a small number of students (average class size 4.7 students). In addition, all the teachers had aides to assist them. Consequently, special education programs for students with mental retardation had better facilities, more teaching aids, and a much lower teacher pupil ratio than did the regular classes in Tanzania. These programs also had teachers' aides who were not available in regular school programs. The students in the observed classrooms varied greatly in age and mental capacity. Table 9 shows the number of students in the classes, students age range and intellectual functioning.

Procedure

First, the teachers in the sample were selected. After grouping teachers according to the educational program in which they taught, random sampling was used to select the teachers in the sample and five teachers to provide feedback on the observational instrument constructed for use in the present study. To avoid inclusion of inexperienced teachers, only teachers who had been teaching students with mental retardation for two years or longer were included in the sample. Random selection of teachers to participate in the observations was made from a list of names of all the eligible teachers in each special education program providing educational services for students with mental retardation.

Table 9

Number of Students, Age Range, and Intellectual Functioning of Students in the Observed Classes

Teacher ID	Lesson Number	Number of Students	Age of Students Low	High
1	1-2	7	10	15
	3	6	10	15
2	1,2,3	5,6,8	15	20
3	1-3	7	15	25
4	1&3	9	6	17
	2	12	6	17
5	1	4	9	13
	2	11	9	21
	3	3	10	14
6	1-2	4	9	21
	3	3	9	21
7	1	3	12	16
	2-3	2	12	16
8	1	5	6	10*
	2	5	6	12*
	3	9	12	17
9	1,2,3	8,13,9	7	13*
10	1-2	8	11	17
	3	6	13	17
11	1,2,3	6,7,5	10	14*
12	1-2	5	10	16*
13	1-3	8	7	13*
14	1-3	6	12	18
15	1,2,	6,5,	9	16
	3	7	5	12*

Average class size = 4.73

* Indicates classes having students with severe mental retardation. All other classes had students with either mild (educable) or moderate (trainable) mental retardation.

Second, five teachers, one from each of the special education programs offering services to students with mental retardation, were selected to provide feedback on the observational instrument. The same procedure was used for the selection of teachers in the observation sample and the selection of teachers to evaluate the observation instrument.

Third, five Tanzanian special education specialists were selected on the basis of involvement with special education for students with mental retardation to provide feedback on the suitability of the evaluation instrument. These specialists selected included two lecturers teaching courses in special education at the University of Dar es Salaam, one special education curriculum developer at the Institute of Curriculum Development in Dar es Salaam (currently the only special education curriculum developer in the country), and two personnel in charge of special education programs for students with mental retardation at the Ministry of Education head office in Dar es Salaam.

Fourth, copies of the observation instruments were distributed to the special education teachers and experts selected to evaluate them. While distributing the instruments, appointments for the interviews were made. Special education teachers and experts evaluated whether or not the items on the evaluation instrument were relevant for use in Tanzanian special education programs for students with mental retardation, if essential aspects of instructional delivery in Tanzania were missing from the instrument, and whether items on the instrument should be modified.

Fifth, interviews with the special education specialists were conducted. These interviews were used to discuss specialists' evaluation of items on the instructional observation instrument. The reason for their comments on each of the items on the observation instrument was sought and discussed.

Sixth, teacher observations were conducted. The observation instrument was used in the evaluation of the instructional methods used by teachers of students with mental retardation in Tanzania. All the lessons observed were recorded on audio-cassette tapes and corresponding anecdotal records of physical aspects of each lesson were made. The information gathered was later transcribed onto the observation checklist. The observation instrument utilized three types of observational techniques. First, a checklist of the essential teacher behaviours for effective instruction was used to determine whether these behaviours were evident in the teaching procedures of teachers in special education programs for students with mental retardation in Tanzania. Second, rating items on aspects of the teaching behaviours were used to determine the degree to which these qualities existed. Last, anecdotal data recorded teacher instructional behaviours that had not been rated on the observation instrument. (For more details refer to appendix A, a blank copy of the observation instrument; and appendix B, for a completed copy of the observation instrument).

Of the fifteen special education teachers in the sample, fourteen were observed three times each while one teacher was observed twice (a total of 44 teacher observations). Each of the observations was conducted during a full unit of instruction which varied from ten minutes to one hour in duration.

A research assistant was involved in the third observation session for nine of the teachers. The research assistant conducted one observation for each of the nine teachers and transcribed audio-tapes and his anecdotal records onto the observation instrument to determine inter-rater reliability.

This study was a field analysis of the instructional methods used by Tanzanian special education teachers of students with mental retardation.

Data Analysis

Analysis of data from the use of the observation instrument was conducted in the following manner.

1. Data on the evaluation of the observation instrument by special education specialists were evaluated according to percentage and types of items special education specialists:

a) agreed upon as essential,

b) viewed as requiring modification,

c) viewed as inappropriate for the Tanzanian context,

d) added to the observational instrument, and

e) the agreement between the evaluation of the special education experts.

2. Data gathered from teacher interviews about their evaluation of the observational instrument were analyzed in the same manner as in a. to e., above. In addition, the amount and type of agreement between the data obtained from the special education teachers and that gained from the special education specialists were analyzed.

3. Teacher observation data were analyzed as follows.

a) Individual teacher protocols were evaluated to identify a pattern in the absence of specific instructional behaviours that would have been appropriate to particular instructional circumstances. This information may be used to provide particular teachers with prescriptive remedial feedback.

b) The percentage was calculated of teachers failing to exhibit a pattern of specific instructional behaviour that would have been appropriate in particular instructional circumstances. This information may be used to identify the need for prescriptive remedial in-service to a group of teachers.

c) The average amount of time used for the administration and interpretation of the observation instrument and the information derived from the observations related to individual and groups of teachers needs for training was evaluated to determine the cost effectiveness of the observation instrument.

d) Data recorded during the observation by the special education specialist were compared to data recorded by the researcher to determine inter-observer reliability.

Limitations of the Study

1. Due to the length of the instrument and the diversity of the items included, it was not possible to count the frequency of the occurrence of each of the instructional behaviours observed. However, the frequency of occurrence of related groups of items was rated. For example, the teachers, use of all the methods of motivating and gaining students attention was rated.
2. The sample included teachers from seven out of the 23 programs which provided education for students with mental retardation. In addition, the schools observed were drawn from three administrative and geographic regions with the majority coming from Dar es Salaam. All the programs observed were in urban centres. Due to ecological diversity of the regions, the same study conducted in other regions may have produced quite different results.

3. All the observation sessions were planned in advance and all of the teachers participating were informed in advance of the observation times. Thus, the teachers may have used effective instructional methods during the observation intervals, but may not characteristically have used the same methods. In addition, the "on stage effect" (Agnew & Pyke, 1987), that is displaying one's best behaviour when aware of being under observation, restricts the researcher from making any generalization about the teachers' use of effective instructional methods during their everyday teaching.
4. Since only teachers of students with mental retardation were included in the sample these findings cannot be generalized to all teachers of students with handicaps in Tanzania.
5. Analysis of the results of the study in relation to the subject matter taught, teacher experience, teacher training, and the type of program is not possible due to the limited size of the sample.
6. The focus of this study was limited to an analysis of the instructional methods used and was not concerned with the appropriateness of the content of instruction and the quality of teaching materials used in the observed lessons.
7. The observations were limited to lessons in the classroom setting and, thus, failed to include other situations in which the students were taught. For example, no analysis was conducted of home-based instruction which was carried out on Fridays by teachers in some of the observed programs. Another example is that of teaching students eating skills and cleaning skills at the time and setting in which the events naturally occur.

8. Most of the teachers in the programs for students with mental retardation could not meet the selection criteria of the sample as they had less than two years of experience teaching in these programs. The limited amount of teaching experience results from the fact that most programs for students with mental retardation have only been recently established. Furthermore, teachers often go for special training after teaching for a short while. The fact that only a few teachers had the experience set as the criteria restricted the generalizability of the findings of the current study.

CHAPTER IV

RESULTS

The present study had two purposes: a) to have special education experts and teachers evaluate appropriateness for the Tanzanian context of an observation instrument developed from a review of effective instruction techniques used in North America, and b) to use the observation instrument to collect exploratory data on the instructional methods used by teachers in special education programs for students with mental retardation in Tanzania.

The results of the study are discussed in two sections. In section one, results of the evaluation of the observation instrument by special education experts and teachers are presented. In section two results of the observation of teachers is presented.

Evaluation of the Observation Instrument

Special education experts and teachers in Tanzania were asked to evaluate the appropriateness of the observation instrument for the Tanzanian context.

Evaluation of the Observation Instrument by the Special Education Experts

The term "special education expert or specialist" in this study refers to individuals in decision-making positions related to academic aspects of special education in Tanzania. This term includes administrators in the Special Education Section of the Ministry of Education, special education curriculum developers from the Institute of Curriculum Development, and lecturers in special education at the University of Dar es Salaam and Tabora Teachers' College.

Sample

Observation instruments were distributed to two University of Dar es Salaam lecturers, one curriculum developer from the Institute of Curriculum Development and three personnel in administrative positions in the Special Education Section of the Ministry of Education. Feedback from the evaluation of the observation instrument by the special education experts was gathered through written comments and interviews. An additional instrument was sent to Tabora Teachers' College, the only College in Tanzania offering special education training for teachers of students with mental retardation. One tutor in mental retardation in Tabora college was requested to sent his written review to the researcher.

Written reviews and interviews were conducted for the Special Education Curriculum Developer and the two University of Dar es Salaam Lecturers. Written review was received from one tutor in mental retardation in Tabora College. Unfortunately, because of tight schedules, none of the administrators at the Special Education Section of the Ministry of Education was available for the evaluation of the observation instrument. However, one University of Dar es Salaam lecturer, currently studying in the United States of America, was able to provide written evaluation of the instrument. This response made a total of five specialists evaluating the observation instrument.

The following instructions and questions were attached to the observation instrument distributed to special education specialists and classroom teachers.

"Instructions: The observation instrument given to you is intended for special education specialists and teachers of students with mental retardation. This instrument was constructed from aspects of instruction identified as essential for instruction in North America. The purpose of this study is to construct an observation instrument and determine its appropriateness for the Tanzanian context. Please take time to evaluate each item and section for its appropriateness. Please identify items that are a) ambiguous, b) applicable to Tanzania but missing from this instrument, c) not applicable to Tanzania, and d) need modification to better suit Tanzania. Please be prepared to discuss each of the changes you recommend. Your recommendations will be used to modify this instrument before its use with the teachers of students having mental retardation."

The following four questions were given to the reviewers for their written comments and for the interviews:

1. What items on this observation instrument do you view as needing modification to be appropriate for the Tanzanian context? Please give reasons for your comments.
2. Are there any items on the observation instrument which are inappropriate for the Tanzanian context which should be left out? Why are they inappropriate?
3. What aspects of instructional delivery relevant to Tanzanian context need to be added to the observation instrument? Give reasons for your view.
4. Does the observation instrument contain any terminology which may not be understood by some people who might be called upon to administer it?

Evaluation of the Observation Instrument by the Experts

Four of the five experts indicated that they viewed the instrument as comprehensive and relevant to the Tanzanian context. Therefore, their comments centred on the structure of the observation instrument. For the first three questions asked: a) whether the observation instrument requires modifications, b) additions, or c) deletions, one reviewer found the instrument appropriate while the other three concentrated on modifications to the structure of the instrument rather than to the content. For example, one reviewer suggested that an example in section one should be left out as it might be confusing to users who may look for the specific behaviours described in the example rather than look for a class of behaviours of which the example provided was only one instance. The example described the following class setting: "Students are seated in a circle in front of the teacher, the teacher is reading from a book in which singular and plural nouns are mentioned on one page, on the opposite page are pictures of singular and plural objects corresponding to those mentioned on the other page. The teacher reads the passage, then shows the pictures to the students and randomly asks one of them to point to the appropriate singular or plural object(s)." In the absence of training in the use of the observation instrument, the problem described by the reviewer may occur. The reviewer pointed to the need either to a) modify the example to indicate more clearly that the example represented a class of behaviours, or b) the need to provide training to everyone using the instrument.

The fifth expert made the following comments in response to the three questions.

Question 1. This reviewer felt that media, (part II, section B, Number 1, method d), was not appropriate for special schools and special education units serving students with mental retardation. The reason for this comment was that these facilities did not have access to "filmstrips, projectors, slides, tapes and recorders."

Question 2. This reviewer felt that the use of audio-taping of the observations should be removed from this instrument as schools and units in Tanzania cannot afford such equipment. However, as only the observer needs to use audio-taping, he/she can take the tape from school to school.

Question 3. This reviewer felt that an item on the techniques teachers used to encourage students to answer questions should be added to the observation instrument. The reviewer felt that "answering teachers' questions and participation in class discussion/conversation increases the ability of students to articulate, verbalize and hence develop speech." Such an item is viewed as important because "most of the mentally retarded children are reluctant to speak or give answers" even when they know the answer. According to this reviewer such behaviour can be attributed to students' "shyness, speech disorders, fear of failure and/or unwillingness."

On the fourth question asked of the reviewers, one reviewer felt that the language used in the instrument was, in general, difficult for the people who might be called to use it. This reviewer recommended translation of the observation instrument into Kiswahili. The other reviewers felt that the language was appropriate as long as only trained school supervisors were called upon to use it.

The Agreement Between Special Education Experts

In general, special education experts agreed that the instrument was applicable to the Tanzanian context. Three specialists concentrated on structural changes in the observation instrument. One expert had one comment on modification of the language used, while the other reviewers had three recommendations, one for modification, one for addition, and one for subtraction. In summary, there was general agreement on the applicability of the observation for programs in Tanzania. However, the four recommendations for change were made by only one expert each. For various reasons discussed later, no modifications were made to the observation instrument.

Special Education Teachers' Evaluations of the Observation Instrument

In this phase of the research, special education teachers evaluated the observation instrument's suitability for use in the Tanzanian context.

Special education teachers included in the evaluation of the observation instrument were teachers who had special training in mental retardation, in addition to two or more years of teaching experience in programs for students with mental retardation.

The observation instrument was distributed to five teachers who met the criteria. The set of instructions and questions given to the experts (see page 103-104) was also given to the teachers in the sample. Written reviews of the observation instrument were obtained from all five teachers. Following is a discussion of their review.

Summary of the Evaluation of the Observation Instrument by Special Education Teachers of Students with Mental Retardation

One teacher felt that the instrument was appropriate and therefore, did not give any suggestions in response to the first three questions. However, this teacher made recommendations in response to the fourth question. These recommendations are discussed below. Another teacher expressed the view that the observation instrument was not suitable for the observation of teachers in programs for students with mental retardation. The reason given for this view was that most of the teachers in these programs have not had special training. The teacher also suggested changes necessary in the instrument. The following is the evaluation of the teachers according to the guiding questions provided to them.

Question one. One teacher felt that in the introduction of the lesson, review of previously learned material through quizzes (Part II, Section A, Number 2, Method b) should be modified to include oral questions. The reason behind the suggestion was that written quizzes are often inappropriate for students with mental retardation. Another teacher felt that the method of using prepared hand-outs (Part II, Section B, Number 1, Method c) was inappropriate as it was too expensive to produce prepared hand-outs. This same teacher felt that part II, section F, Number 2, which dealt with teachers' reaction to inattention and misbehaviour needs modification. The reviewer felt that "teachers must react very negatively" to inappropriate behaviour to "shape a child's behaviour towards correct behaviour." This reviewer remarked that ignoring behaviour, which is referred to as "letting the child do what he wants" will lead the child to behave in ways that are unacceptable to society. This comment may indicate cultural differences in the Tanzanian and western societies in their approach to controlling inappropriate behaviour.

Question two. One teacher felt that the item on homework was inappropriate because of the students' functional level (students in most special education programs for students with mental retardation function at the moderate to severe levels and would not usually have homework). This teacher also viewed homework as inappropriate as most students in the observed programs come from home backgrounds where parents may not have the ability or the time to help students with homework. In addition, the teacher felt that the item on lectures was not appropriate due to the students' low level of functioning, e.g., teachers do not lecture to students having moderate to severe intellectual functioning. The reviewer suggested that these two items should be removed from the observation instrument. Another reviewer noted that many schools offering services for students with mental retardation do not have access to audio-taping equipment, thus, its use in the observation procedure was not thought to be feasible. The use of audiotapes was seen as not feasible due to financial constraints.

Question three. One teacher felt that short stories, proverbs, and riddles (Swahili: hadithi, methali, na vitendawili) should be added to the instrument as these methods are regularly used in Tanzania. These methods were thought to be important because they help train students' memories while at the same time pass on cultural values. Another teacher thought that items evaluating appropriateness of the content of the lesson for the culture should be included in the observation instrument. These questions would evaluate whether the content presented in every lesson was appropriate to the cultural background of the students. This analysis would include an evaluation of the students cultural values. Yet another teacher viewed the inclusion of items which evaluate the extent to which students are taught in the situation in which the activity normally occurs should be included.

Question four. Four of the five teachers felt that the language used in the instrument was not hard to understand. However, one of these reviewers felt that teachers who have not had any special training may not be able to understand some of the terminology. This reviewer did not specify the specific terminology which might be difficult to understand in the written review and since no interviews were held this information is could not be obtained. The fifth teacher identified use of the word "instrument" as being hard to understand in the observation instrument.

The Agreement Between Special Education Teachers

The teachers thought that the observation instrument was applicable in general. As a group, the teachers made nine recommendations for change. Of these nine comments, each was only made by one teacher. Thus there was no agreement on the evaluation of the teachers.

Comparison of the Teachers and the Experts Review of the Observation Instrument

Both the experts and the teachers agreed that the observation instrument was applicable to the Tanzanian context. Moreover, there were two incidents of agreement between teachers and experts. The subtraction of one item (Part II, Section B, Method d) dealing with media and the use of audio-taping were suggested by one teacher and one expert. It was not possible to carry out any statistical analysis because recommendations for changes were very few. However, it is apparent that the teachers made more recommendations for change than did the experts. No changes were made in the instrument before its use in classroom observation because most of the feedback was received after the researcher had embarked on the observations. However, suggestions for recommended modification are reviewed in the discussion chapter.

Results of Teacher Observations Using the Observation Instrument

Pattern of Individual and Group Data from the Observation Instrument

In the following discussion, the numbers reported in the tables that follow represent the number of lessons in which specific teaching methods were observed or the number of lessons in which a rating was obtained. For the individual data, all teachers except teacher 12 were observed in three lessons. Teacher 12 was observed twice. Thus, in Table 10.1(a) the number 2 for teacher 1 in column (b) indicates that the teacher mentioned skills to be learned ("mentioned skills") in 2 of the three lessons observed. The total of 24 at the bottom of column (b) indicates that teachers mentioned skills to be learned during the introductory phase of instruction in 24 out of the 44 lessons observed. The same method of analyzing the data is used in Tables 10.1(a) to 10.4. Therefore, the group data is presented from a total of the 44 lessons observed. In the presentation and discussion of the results, the teachers observed will be referred to numerically as teachers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15. The data on instructional methods used in the lessons observed is presented in the same order as in the corresponding sections on the observation instrument.

Section A: Lesson Introduction Phase of instruction

The first section of the observation instrument (Section A), was related to the Lesson Introduction Phase of Instruction, which concerned four instructional methods. The four instructional methods are listed below.

(1) "Attempts to motivate and gain attention," (Table 10.1 (a and b) for example, predicts enjoyment and promises reward; (2) "Review of related material previously learned" (Table 10.2 a & b); (3) "Pre-teaching parts of skills/information to be learned later" (Table 10.3); and (4) "Statement of the purpose of the lesson (Table 10.4)." A record was made of the frequency with which each of the fifteen teachers exhibited the instructional methods in the Lesson Introduction Phase of the Observation Instrument. These data ares discussed below.

Number 1. Attempts to motivate and gain attention

The teachers' "Attempts to Motivate and Gain Attention" were evaluated in terms of six instructional methods: a) predicts enjoyment, b) mentions skills to be learned, c) promises reward, d) reminds students of criteria, e) uses media, and f) uses other methods observed by the researcher. Tables 10.1 (a and b) show the number of lessons observed in which each of the teachers exhibited each of the six instructional behaviours attempting to motivate and gain attention. Each of the six types of motivation and attention gaining methods rated are discussed below.

(Method a) Predicts enjoyment. On this item (see column a in Table 10.1(a)) a teacher makes a statement predicting that the students will enjoy themselves during the lesson. An example of this behaviour is when teacher 11 made a statement that the lesson involved drawing and colouring flowers which would be fun to do. Only two teachers, 11 and 13, made statements to the effect that students would enjoy themselves during the lessons. Teachers 11 and 13 each made statements in only one of the three lessons observed for each teacher. Therefore, teachers predicted enjoyment to motivate students in only 2/44 of the lessons observed, 4.6% of the observations made. However, as is frequently done in Tanzania, the teachers often began their lessons with songs which the students knew and enjoyed. This activity may have been motivating and may have implied that the lesson would be enjoyable.

(Method b) Mentions information or skills to be learned. See Table 10.1(a), column (b). Teacher 3 illustrated the use of this method by stating that the students were going to learn the names and uses of the equipment in a woodwork workshop. The same teacher in a physical education lesson told the students they were going to learn how to start a 100 meter race. Only three of the fifteen teachers observed, 8, 10, and 12, did not mention the information or skills to be learned in any of the three observations. Four teachers, 3, 6, 7, and 13, mentioned the information or skill to be learned in each of the three (3/3) lessons observed; four teachers, 1, 4, 14, and 15, mentioned the skills in 2/3 of their lessons; while four teachers, 2, 5, 9, and 11, mentioned the skills to be learned in only 1/3 of the lessons observed. In total, mentioning the information or skills to be learned was observed in 24/44 of the lessons observed, 54.6% of the observations made.

(Method c) Promises reward. See Table 10.1(a), column (c). In this method the teachers promised students external rewards for good attention or work. An example of such promises was that made by teacher 11. This teacher promised students that they

Table 10.1(a)

Frequency of Teaching Methods
Section A: Lesson Introduction
Number 1: Attempts to Motivate and Gain Attention

Method	(a) Predicts enjoyment	(b) Mentions skills	(c) Promises reward	(d) Reminds criteria	(e) Media
Teacher					
1*		2			
2		1			2
3		3			
4		2			1
5		1	1		1
6		3			
7		3			
8					1
9		1			1
10			1		1
11	1	1	2		
12					1
13	1	3			
14		2	1		
15		2			
Total	2	24	5	0	8
Percent	4.6	54.6	11.4	0	18.2

* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

Note: The figures refer to the number of lessons in which the instructional technique was observed.

could take their work home to their parents at the end of the school term, if they produced good work. The researcher noticed that the promise of reward discussed above was very motivating for students in a residential special school. Only four teachers, 5, 10, 11, and 14, promised external rewards to their students. Teacher 11, promised rewards in 2/3 lessons, while the other three teachers promised rewards in only 1/3 of the lessons observed. In summary, promising reward for participation in the lesson was exhibited in 5/44 lessons observed, 11.4% of the observations made.

(Method d) Reminds of criteria. See Table 10.1(a), column (d). This method involved teachers reminding students about later requirements, such as, tests based on the lesson. No teacher exhibited this behaviour in any of the lessons observed.

(Method e) Uses media. See Table 10.1 (a), column (e). This section of the instrument refers to all teaching tools used by teachers in the instructional process. This is in accordance with Oates (1971) definition, "the term instructional media generally refers to all teaching tools used by teachers." Thus, use of media includes a wide variety of items, for example, drawings, real objects, and films. An instance of use of media is that of teacher 2 who used a collection of items which go together, e.g., a letter and a file, and a padlock and a key. The teacher drew students' attention to the items and had the students name these items before starting the matching activity. This teacher used media to motivate students in 2/3 lessons observed. Six teachers, 4, 5, 8, 9, 10, and 12, used media to motivate students in 1/3 lessons observed. The other eight teachers did not use media to motivate students. In summary, teachers used media to motivate students in 8/44 of the lessons observed, 18.2% of the observations made.

(Method f) Other. See Table 10.1(b), column (f). In this method, other methods of motivating or gaining students' attention used in the lessons observed were recorded. The researcher noted that for all teachers observed, the most commonly used method of motivating students was the use of songs. Although these songs were usually related to the content or the purpose of the lesson to be taught, there were a few incidents where the songs were unrelated to the lessons taught. Three teachers, 5, 8, and 10, used "other methods" of gaining students attention in 2/3 of the lessons observed, while three teachers, 3, 4, and 14, did not use methods other than those presented earlier to gain students' attention. All the other nine teachers used "other methods" in only 1/3 of the lessons observed. "Other methods" of gaining attention or motivation were observed in 15/44 of the lessons observed, 34.1% of the observations made. Of the 44 observations, teachers used one or more of the six methods in all 44 lessons observed.

Item (g) Rating teachers' use of methods discussed above (methods a to f) in attempts to motivate and gain students attention. See Table 10.1 (b), column (g), 1, 2, 3, & 4. Each time a teacher was observed to determine if she/he had used one or more of the six methods to motivate and gain attention, a rating was also made of the frequency with which the teacher used each of the methods when their use would have been appropriate. Thus, Table 10.1(a & b) columns a to f indicate the frequency with which each method was employed. In some lessons observed no such methods may have been used and none may have been appropriate. Therefore, in Table 10.1(b), column (g), 1, 2, 3, & 4, a rating is given to show how frequently the teachers attempted to motivate

Table 10.1(b)
Frequency of Teaching Behaviours
Section A: Lesson Introduction
Number 1: Attempts to Motivate and Gain Attention

Method	(f) Other	(g) Rating 1 Never	2 Rarely	3 Sometimes	4 Always
Teacher					
1	1				3
2	1	1			2
3				1	2
4				3	
5	2		1	1	1
6	1			1	2
7	1		1	1	1
8	2	1		1	1
9	1		1	1	1
10*	2			1	1
11	1			3	
12	1	1	1		
13	1			2	1
14				1	2
15	1			1	2
Total	15	3	5	17	18
Percent	34.1	6.8	11.4	38.6	40.9

Rating
1 Never uses method when required
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required
5 Rating item not applicable for the lesson
* Teacher 10 started one lesson without using any of the methods but it was appropriate for the communication lesson.

and gain attention when such methods would have been appropriate.

Teachers 2, 8, and 12 had a rating of 1 in 1/3 of their lessons meaning that they failed to use methods when it was required in 1/3 of their lessons observed. Teachers 5, 7, 8, 9, and 12 rarely used methods of motivating and gaining attention; thus, being assigned a rating of 2. In 17/44 lessons observed, 38.6% of the observations made, teachers got a rating of 3 as they displayed these teaching behaviours most of the time but not always. A rating of 4 was assigned to teachers' attempts to motivate and gain attention in 14/44, 31.9% of the observations made. The rating of 3 and 4 are viewed as satisfactory while ratings of 1 and 2 are not satisfactory. Thus, teachers displayed satisfactory attempts to motivate and gain students' attention in 31/44 of the lessons observed, 70.5% of the observations made. Teachers displayed unsatisfactory attempts to motivate and gain students' attention in 8/44 of the lessons observed, 18.2% of the observations made. Teachers 1, 2, 10, and 15 used other methods. As for the individual teachers, teacher 12 had unsatisfactory ratings (ratings of 1 or 2) in 2/2 of the lessons observed while teacher 8 displayed unsatisfactory instructional behaviour in 2/3 of the lessons observed. Four other teachers 2, 5, 7, and 9 displayed unsatisfactory behaviour in 1/3 of their lessons.

Summary. As a group, the observed teachers tended to use two methods in their attempts to motivate and gain students' attention. Mentioning of skills to be learned (method b) was observed in 24/44 of the lessons observed, 54.6% of the observations made; "other methods" especially use of songs, were observed in 15/44 of the lessons observed, 34.1% of the observations made. Methods a, c, d, and e, of gaining students, attention were used in very few lessons observed. Although students involved in all the lessons observed appeared to be motivated and the teachers gained students' attention easily, teachers in this group may benefit from an in-service course on the use of the methods a to e to motivate and gain students' attention. Such training could equip teachers with a greater knowledge and competence in the use of these methods and perhaps add variety to their lessons and further enhance motivation and attention.

Number 2: Review of related materials previously learned

Table 10.2(a & b), indicate the number of lessons in which each of the 15 teachers reviewed related materials taught in earlier lessons. Each of the three methods of reviewing previously learned materials is discussed below.

(Method a) Questions. See Table 10.2 (a), column (a). Each teacher's use of questions to review related materials, previously learned was observed. For example, teacher 2 in an art lesson asked students to name and identify previously learned items that were to be used in the lesson she was about to teach. All teachers except teacher 10 used questions to review related material in one or more of their lessons. Teachers 4, 7, and 14 used questions to review related material in all three lessons observed, while teachers 1, 2, 3, 5, 8, 9, and 11 used questions in 2/3 of their lessons observed. Teacher 12 used questions in all 2/2 of the lessons observed. Teachers 6, 13, and 15 used questions in 1/3 of their lessons in which use of questions was appropriate. Use of questioning to review related material was observed in 28/44 lessons observed, 63.6% of the observations made.

(Method b) Quizzes. See Table 10.2 (a), column (b). This method involved teachers giving students written or oral quizzes to review related material previously learned. None of the teachers exhibited this teaching behaviour in any of the lessons observed.

(Method c) Summary. See Table 10.2 (a), column (c). Teacher 7 illustrated the use of a summary to review related material previously learned in a health education lesson. In this lesson, the teacher summarised what the class had discussed previously about their routine in the morning before going to school. The teacher's summary led to questions on the importance of brushing one's teeth after every meal and eventually to teaching students how to brush their teeth. Teachers 7 and 13 used summaries in 1/3 of their lessons. Use of summaries to review related material was observed in 2/44 of the lessons observed, 4.5% of the observations made. Most teachers at the end of a lesson elicited a summary of important points of previously learned material through the use of well planned questions; however, the teachers used summaries of previously learned material at the beginning of only 2/44 of the lessons observed.

(d) Not observed. See Table 10.2 (a), column (d). In this column, the frequency was recorded of the number of lessons observed in which related materials was not reviewed when such a review would have been applicable. Teachers 2 and 9 did not review related previously learned material in 1/3 of their lessons in which review would have been applicable. Thus, there was no summary in 2/44 of the lessons observed, 4.5% of the observations made when it would have been appropriate.

(e) Not applicable. See Table 10.2 (a), column (e). These were lessons in which related material previously learned was not reviewed and in which a review was not applicable. For example, in a physical education lesson which involved song games taught by teacher 15, review of related material would not have been applicable.

Table 10.2(a)
Frequency of Teaching Behaviours
Section A: Lesson Introduction
Number 2: Review of Related Material

Method	(a) Questions	(b) quizzes	(c) Summary	(d) Not observed	(e) Not applicable
Teacher					
1*	2				1
2	2			1	
3	2				1
4	3				
5	2				1
6	1				2
7	3		1		
8	2				1
9	2			1	
10					3
11	2				1
12	2				
13	1		1		1
14	3				
15	1				2
Total	28	0	2	2	13
Percent	63.6	0	4.6	4.6	29.6

Note: The figures refer to the number of lessons in which the instructional technique was observed
* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

Teachers 1, 3, 5, 8, 11, and 13 did not review related material in 1/3 of their lessons because it was not applicable. Teachers 6 and 15 did not review previously learned materials in 2/3 of their lessons in which review was not applicable. Teacher 10 did not review related material in 3/3 lessons observed as it was not applicable. Review of related material was not applicable in 13/44 lessons, 29.6% of the observations made. Thus, teachers did not provide a review in these 13 lessons observed. Most of the lessons observed in which review of related materials previously learned would not have been applicable were communication lessons. In these lessons, students' oral expression was more important than was memory of knowledge previously learned.

(f) Other methods. See Table 10.2(b), column (f). No other methods of review of related materials were observed in any of the lessons observed.

(g) Rating teachers' review of related material previously learned. See Table 10.2 (b), column (g), 1, 2, 3, 4. Teachers were rated on their use of questions, quizzes, and summaries to review related material previously learned. Teacher 9 got a rating of 1 in 1/3 of the lessons observed, implying no instructional behaviour geared towards review of related material previously learned was observed although it would have been applicable. Teacher 6 in 1/3 of the lessons observed rarely reviewed related material previously learned, consequently being assigned a rating of 2. A rating of 3 was assigned to 8 lessons, while 19 lessons observed got a rating of 4. Therefore, 2/44 of the lessons observed, 4.5% of the observations made had an unsatisfactory rating (ratings of 1 or 2); 27/44 of the lesson, 61.4% of the observations made, had satisfactory rating (ratings of 3 or 4); while 15/44 of the lessons

Table 10.2(b)

Frequency of Teaching Behaviours
Section A: Lesson Introduction
Number 2: Review of Related Material

Method	(f) Other	(g) Rating				
		1 Never	2 Rarely	3 Sometimes	4 Always	5 Not Applicable
Teacher						
1					1	2
2				1	1	1
3					2	1
4				1	2	
5				1	1	
6			1			2
7				1	2	
8				2		1
9		1			2	
10						3
11					2	1
12				1	1	1
13				1	1	1
14					3	
15					1	2
Total	0	1	1	8	19	15
Percent	0	2.3	2.3	18.2	43.2	34.1

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* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

observed were not rated as review of related material previously learned was not applicable.

Summary. Questions were used to review related previously learned material in 63.6% of the observations made. Quizzes were not used in any of the lessons observed, whereas summaries were used to review related material previously learned in 2/44 of the lesson. Most teachers considered written quizzes to be inappropriate for students with low intellectual functioning in the programs for students with mental retardation in Tanzania. Related previously learned materials were reviewed when applicable in all but 2/44 of the lessons observed, 4.5% of the observations made. Hence, an in-service course in the review of related material is not required as teachers displayed appropriate behaviour in 42/44 of the lessons observed, 95.5% of the observations made.

Number 3: Pre-teaches parts of skill\knowledge to be taught later

Table 10.3, indicates the number of lessons observed in which the teachers pre-taught skills\knowledge to be learned later in the lessons to be taught.

(a) Observed. See Table 10.3, column (a). This item involved pre-teaching of skills/knowledge to be learned later in the lesson. Pre-teaching skills/knowledge in the introductory phase of the lessons was not observed in any of the lessons observed.

(b) Not Observed. Table 10.3, column (b), records the number of instances when pre-teaching of skill\ knowledge was not observed when it would have been applicable. For example, teacher 3 in a lesson designed to teach students to recognize which coins were "worth more", could have taught students the concept of "greater than" in numbers before engaging them in working with

Table 10.3
Frequency of Teaching Behaviours
Section A: Lesson Introduction
Number 3: Pre-teaches Parts of Skills

Item	(a) Observed	(b) Not observed	(c) Not applicable	(d) Other
Teacher				
1			3	
2		1	2	
3		1	2	
4			3	
5			3	
6			3	
7		1	2	
8		1	2	
9			3	
10			3	
11			3	
12		1	1	
13		1	2	
14			3	
15			3	
Total	0	6	38	0
Percent	0	13.6	86.4	0

* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

money. Teachers 2, 3, 7, 8, 12, and 13, in 1/3 of their lessons, did not pre-teach skills when it would have been applicable. Thus, pre-teaching parts of skills/knowledge to be learned later was not observed in 6/44 lessons, 13.6% of the observations made in which it would have been applicable. In the remainder of the 38/44 lessons observed, 86.36% of the observations made, pre-teaching of skills would not have been applicable.

(Method c) Not Applicable. Table 10.3, column (c), records the number of lessons observed in which pre-teaching of parts of skills\knowledge was not applicable. For example, in communication lessons where the major purpose of the lesson is to allow students to spontaneously respond to questions and express themselves, pre-teaching of the skills would not have been suitable. For teachers 1, 4, 5, 6, 9, 10, 11, 14, and 15, pre-teaching skills would not have been appropriate in any of their lessons (3/3), while for teachers 2, 3, 7, 8, and 13, pre-teaching would not have been applicable in 2/3 of their lessons. For teacher 12 pre-teaching would not have been applicable in 1/2 of the lessons observed. Therefore, pre-teaching of parts of skills\knowledge would not have been applicable in 38/44 lessons observed, 86.4% of the observations made.

(Method d) Other. See Table 10.3, column (d). This includes any other observations made in relation to the teachers' use of pre-teaching parts of skill\knowledge to be used later in the lessons. No other observations were made.

Summary. Pre-teaching parts of skills/knowledge to be learned later was not observed in any of the 44 lessons. In 13.6% of the observation made, pre-teaching of skills/knowledge to be learned later was not observed although it would have been applicable. This method would not have been applicable in the rest of the lessons observed (86.4% of the observations made). In-service training in the use pre-teaching as a method of instruction may be beneficial to teachers in this group.

Number 4: Statement of purpose of the lesson.

Table 10.4 indicates the frequency with which (a) teachers shared the purpose of their lessons with their students, (b) teachers specified objectives of their lessons, (c) the researcher made "other observations and comments" about teachers' statements of the purpose of the lesson, (d) the researcher found statement of purpose or specifying objectives of the lesson not to be applicable, and (e) the researcher's rating of teachers' statement of goals of the lesson.

(Method a) Shares purpose of the lesson. See Table 10.4, column (a). In this method the teachers shared the purpose of the lesson with their students. For example, teacher 10 in a communication lesson shared with the students that they were going to narrate what the students had done over a long holiday weekend recently celebrated. Teachers 3 and 15 shared the purpose of the lesson in all three lessons observed. Teachers 1, 2, 4, 5, 6, and 11 shared the purpose of the lesson in 2/3 of the lessons, while teachers 7, 9, 10, and 14 shared the purpose of their lessons in 1/3 of the lessons observed. Two teachers 8, and 12 did not share the purpose of the instruction in any of the lessons observed. Thus, sharing the purpose of instruction was observed in 26/44 of the lessons, 59.1% of the observations made.

(Method b) Specifies objectives. See Table 10.4, column (b). An example of specifying objectives of the lesson is that of teacher 14, who in a lesson in writing, specified the consonants the students were going to learn how to write. Teacher 13 specified objectives in all 3/3 lessons observed. Teachers 3, 4, 6, 7, 9, 11, and 14 specified objectives of the lessons in 2/3 of the lessons

Table 10.4
Frequency of Teaching Behaviours
Section A: Lesson Introduction
Number 4: Statement of the Purpose

Method	(a) Shares purpose	(b) Specifies objectives	(c) Other	Rating 1 Never	2 Rarely	3 Sometimes	4 Always
Teacher							
1	2			1			2
2	2	1				2	1
3	3	2				1	2
4	2	2		1			2
5	2	1		1		1	1
6	2	2		1		1	1
7	1	2		1		1	1
8			1	3			
9	1	2		3			
10	3				1	2	
11	2	2				1	2
12				2			
13	2	3					3
14	1	2		1			2
15	3					2	1
Total	26	19	1	14	1	11	18
Percent	59.1	43.2	2.3	31.8	2.3	25	40.9

* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

observed. Teachers 2 and 5 specified objectives in only 1/3 of the lessons while teachers 1, 8, 10, 12, and 15 did not specify the objectives in any of the lessons observed. Specifying objectives in terms of what students are expected to learn was observed in 19/44 of the lessons, 43.2% of the observations made.

(c) Other observations and comments. See Table 10.4, column (c). In this item, other observations and comments on the teachers' efforts to make students aware of the purpose of the lesson were recorded. For example, the researcher observed that teacher 8 began one lesson with no statement of purpose or specifying objectives of the lessons. Teacher 15 announced the game they were to play just as they were about to play it. The purpose of the lesson instructed by teacher 15 was to perform physical exercises to enhance students' physical development. Thus, teachers 8 and 15 had "other observations and comments" made about their statement of the purpose of the lesson in 1/3 of their lessons. Therefore, other observations and comments were made in 2/44 lessons observed, 4.5% of the observations made.

(d) Not Applicable. See Table 10.4, column (d). There was no lesson in which a statement of the purpose of the lesson was not applicable.

(e) Rating. See Table 10.4, column (e). In this item, teachers were rated on the frequency with which they made known to the students the purpose of instruction. Teachers usually made students aware of the purpose of lesson when required (rating of 4), in 18/44 of the lessons observed, 40.9% of the observations made. In 11/44 lessons observed, 25% of the observations made, teachers sometimes made students aware of the purpose of instruction (rating of 3). Teachers did not make the students aware of the purpose of the lesson when it was necessary in 14/44 of the lessons observed, 31.8% of the observations made. Thus, 29/44 of the lessons observed were rated as satisfactory, whereas 15/44 of the lessons observed were rated as unsatisfactory.

Summary. Most teachers made their students aware of the purpose of the lesson, however, there were 31.8% of the observations made in which teachers did not make statement of the purpose of the lesson and thus were given a rating of 1. An in-service course on the statement of the purpose of the lesson would be advantageous to this group of teachers.

Data Analysis (Sections B to F)

In Sections B to F of the observation instrument, a record has been made of the number of observations in which teachers did not employ instructional methods that would have been appropriate in the situations observed. The number and type of instructional behaviours that the teachers failed to exhibit when they would have been appropriate, has been analyzed to determine a) the need for prescriptive remedial feedback, to specific teachers, and b) the need for more general training for all of the teachers in the group observed. An analysis has also been made of teaching methods which were (a) observed and applicable for the lesson, (b) not observed and not applicable for the lesson, and (c) not observed and applicable for the lesson.

The data on instructional methods used in the lessons observed is presented in the same order as in the corresponding sections on the observation instrument.

Section B: Presentation of New Materials

Tables 11.1 (a, b, c, d, & e) to 11.5 indicate the frequencies with which the different methods of teaching were used in the presentation of new materials.

Number 1: Delivery of new information and/or skills

Table 11.1(a to e) show lessons observed in which the teachers either demonstrated or did not demonstrate specific instructional delivery methods, related to delivery of new information and/or skills, when they would have been either appropriate or not appropriate.

(Method a) Demonstration in front of the group. See Table 11.1(a), column (a). For example, teacher 9, when instructing students how to brush their teeth, did not demonstrate for the students how to brush teeth. A demonstration would have been appropriate in the situation. Thus, for teacher 9 column(a) 3 "No/A" indicates a 1 to show that in one lesson no demonstration was observed (NO) when it would have been appropriate (A). Teachers 1, 8, and 9 also have 1's in the (NO/A) column. Thus, in the delivery of new information or skills, there were 3/44 of the lessons observed, 6.8% of the observations made in which teachers did not demonstrate the new skills to be learned. In all other lessons observed, 41/44 lessons, 93.2% of the observations made, teachers demonstrated the skills to be learned in front of the class whenever it was appropriate to provide demonstration. Twelve teachers demonstrated skills in all their lessons while three teachers did not demonstrate skills in 1/3 of their lessons. Thus, teachers in programs for students with mental retardation in Tanzania seem to be well versed in the use of demonstration in the presentation of new skills and information.

(Method b) Lecture. See Table 11.1 (a), column (b). None of the teachers used the lecture method of instruction in any of their lessons. Use of lecture method of instruction would not have been appropriate for the students with mental retardation in the classrooms observed.

(Method c) Use of hand-outs such as teaching aids or diagrams. See Table 11.1 (a), column (c). Teacher 8 did not use teaching aids when they would have been

Table 11.1(a)
Presentation of New Materials (Section B)
Number 1: Delivery of New Information or Skills

Method	(a) Demons-tration			(b) Lecture			(c) Prepared hand-outs		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	2		1		3			3	
2	3				3			3	
3	3				3			3	
4	3				3			3	
5	2	1			3		1	2	
6	2	1			3			3	
7	3				3		1	2	
8	2	1	1		3		2		1
9	2		1		3			3	
10	1	2			3		1	2	
11	3				3		1	2	
12		2			2			1	1
13	3				3		2	1	
14	2	1			3		1	2	
15	3				3		2	1	
Total	34	8	3	0	44	0	11	31	2
Percent	77.3	18.2	6.8	0	100	0	25	70.5	4.5

* Categories:
1 Observed and Applicable,
2 Not Observed and Not Applicable, and
3 Not Observed but Applicable.
* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

appropriate in 1/3 of the lessons observed, while teacher 12 did not use aids in 1/2 of the lessons observed. For example, teacher 12 in a religious and moral education lesson, could have used pictures of Mary and Jesus which were available. Pictures of the universe and animals would also have been appropriate when the teacher discussed them as God's creation. Teachers 8, 13, and 15 distributed prepared hand-outs in 2/3 of their lessons while teachers 5, 7, 10, 11, and 14 distributed prepared hand-outs in only 1/3 of the lessons observed in which they were appropriate. Thus, teachers did not use hand-outs when they would have been appropriate in 2/44 lessons observed, 4.5% of the observations made, while and-outs were used in 11/44 of the lessons observed in which they were appropriate, 25% of the observations made. In 31/44 lessons observed, 70.5% of the observations made, hand-outs would not have been applicable. For example, in a communication lesson in which the purpose was to have students recall and discuss their weekend, hand-outs would not have been applicable. There were only 2/44 lessons observed in which the teachers did not use hand-outs when they would have been appropriate, thus indicating a need for prescriptive feedback to teachers 8 and 12 rather than in-service training for the entire group.

(Method d) Media. See Table 11.1 (b), column (d). Media in this method refers to all instructional tools except hand-outs. Thus, it includes real objects and instructional aids, such as film projectors, video machines and audio-tapes, and slides projectors. For example, teacher 12 in the moral and religious lesson discussed above could have used taped songs, readily available in Kiswahili, to describe creation. Three teachers, 8, 12, and 13, did not use media in 1/3, 6.8% of the lessons observed when the use of media would have been appropriate. Teachers 5 and 12 used media when appropriate in 1/3 of their lessons. Thus, use of media was observed in 2/44 of the lessons, 4.5% of the observations made. In all other lessons observed 39/44, 88.6% teachers did not use media and media was not applicable in these lessons. The use of media, such as, cassette recorders and video players would not have been appropriate as many of the programs observed did not have access to such items. In-service training in the use of media may be helpful to encourage teachers to plan for use of media in their lessons where they have access to it.

(Method e) Questioning students to check understanding. See Table 11.1(b), column (e). For example, teacher 1 in a health education lesson, where the purpose was to teach students how to clean nails, did not ask the necessary questions to check students' understanding of how to clean nails. Teacher 1 did not use questioning to check students' understanding in 1/3 of the lessons observed when questions would have been appropriate, 2.3% of the observations made. Teachers 1, 5, and 15 did not use questioning to check understanding in 1/3 of their lessons when questions were not applicable, 6.8% of the observations made. Use of questioning to check students' understanding was observed in 40/44 of the lessons observed, 90.9% of the observations made. The observed teachers used questions to check understanding when necessary in all but one lesson. Therefore, there is no need for group in-service training in the use of questions to check understanding. Teacher 1 should be provided with prescriptive feedback on the use of questions to check students' understanding.

(Method f) Inviting and responding to students' questions. See Table 11.1(b), column (f). For example, in a lesson on body cleanliness one of the teachers

Table 11.1(b)
Presentation of New Materials (Section B)
Number 1: (Delivery of New Information or Skills)

Method	(d) Media			(e) Questioning to check understanding			(f) invite and respond to students' questions		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1		3		1	1	1		3	
2		3		3			2	1	
3		3		3				3	
4		3		3				3	
5	1	2		2	1			3	
6		3		3			1	2	
7		3		3			1	2	
8		2	1	3				3	
9		3		3				3	
10		3		3				2	1
11		3		3			1	1	1
12	1		1	2				2	
13		2	1	3				2	1
14		3		3				3	
15		3		2	1			3	
Total	2	39	3	40	3	1	5	36	3
Percent	4.5	88.6	6.8	90.9	6.8	2.3	11.4	81.8	6.8

* Categories

1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

seemed to suppress students' questions instead of inviting and responding to them. There were three instances (6.8%) where teachers did not invite or respond to students' questions as necessary. Teachers 10, 11, and 13, in 1/3 of their lessons, did not invite or respond to students' questions when questions would have been appropriate. Teacher 2 invited and responded to students' questions in 2/3 of the lessons while teachers 6, 7, and 11 invited and responded to student questions in 1/3 of their lessons. Thus, teachers invited and responded to students' questions in 5/44 of the lessons observed, 11.4% of the observations made. Teachers did not invite or respond to students' questions in 36/44 of the lessons, 68.2% of the observations made in which questions were not applicable. Students are generally not encouraged to ask questions in most regular classrooms in Tanzania because of the cultural background and for administration purposes, i.e., regular classrooms, at times, have as many as 120 students taught by one teacher. Most of the teachers in programs for special education carry this practice from regular to special classrooms because the teachers generally start their teaching career in overcrowded regular classrooms.

(Method g) Focused discussion. See Table 11.1 (c), column (g). This method involves the use of prepared sequenced questions as a means of delivery of new information or skills. For example, teacher 4 used questions in a health education lesson to lead students in a discussion of the importance of keeping eating utensils clean and methods of cleaning such utensils. The teacher also gave the students hands-on practice in cleaning cups and plates used at the program. Focused questions were used in the delivery of new information in 35/44 of the lessons, 79.5% of the observations made. In 9/44 of the lessons observed, 20.5% of the observations made, use of focused questioning as means of delivery of new skills and information would not have been applicable. All teachers exhibited proper use of focused questions, leaving no need for prescriptive feedback or in-service training in this teaching method.

(Method h) Students take turns in reading or reciting. See Table 11.1 (c), column (h). For example, teacher 15, in a reading lesson, had students take turns reciting vowels. Teacher 14 used turns in 2/3 lessons observed, whereas teachers 7, 8, and 13 used turns in 1/3 of their lessons in which taking turns was appropriate. Hence, turn-taking was used in 5/44 of the lessons observed in which taking turns was appropriate, 11.4% of the observations made. Taking turns was not applicable in 39/44 of the lessons observed, 88.6% of the observations made. Use of turns in teaching should be included in an in-service course as it would be beneficial to the majority of the teachers observed.

(Method i) Drill. See Table 11.1(c), column (i) In this method teachers use of flash cards, maths Tables, chorus questions, etc. as a means of drill was observed. For example, teacher 15 in a lesson on vowels required chorus answers from her/his students. Teacher 9 used drill in 3/3 of the lessons observed, teachers 2, 8, and 15 used drill in 2/3 of their lessons while teachers 1, 3, 4, 5, 7, 10, and 11, used drill in 1/3 of their lessons in which drill was appropriate. Teacher 12 used drill in 1/2 of the lessons observed in which drill was appropriate. In total, drill was used appropriately in 17/44 of the lessons observed, 38.6% of the observations made. Teachers did not use drill in 27/44 of the lessons observed, 61.4% of the observations in which drill was not applicable. As a group, the teachers displayed use of drill whenever it was applicable. Thus, no

Table 11.1(c)
Presentation of New Materials (Section B)
Number 1: Delivery of New Information or Skills

Method	(g) Focused discussion			(h) Take turns			(i) Drill		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	2	1			3		1	2	
2	2	1			3		2	1	
3	2	1			3		1	2	
4	3				3		1	2	
5	3				3		1	2	
6	2	1			3			3	
7	3			1	2		1	2	
8	3			1	2		2	1	
9	3				3		3		
10	3				3		1	2	
11	1	2			3		1	2	
12	2				2		1	1	
13	1	2		1	2			3	
14	3			2	1			3	
15	2	1			3		2	1	
Total	35	9	0	5	39	0	17	27	0
Percent	79.5	20.5	0	11.4	88.6	0	38.6	61.4	0

* Categories
1 Observed and Applicable
2 Not Observed and Not Applicable
3 Not Observed but Applicable

* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

prescriptive feedback or in-service training in the use of drill is necessary.

(Method j) Practical exercise or experiment. See Table 11.1 (d), column (j). On this method the use of practical exercises and/or experiments was observed. For example, teacher 9 had students cook porridge in a cookery lesson. None of these teachers failed to use experiments or practical exercises when they were applicable. Teacher 11 used practical exercises in 3/3 of her/his lessons, teachers 3, 4, 5, 6, 7, 9, and 13 used practical exercises in 2/3 of their lessons while teachers 1, 2, 8, and 12 used practical exercises in 1/3 of their lessons. Teachers 10, 14, and 15 did not use practical exercises in any of their lessons. Thus, practical exercises and/or experiments were used in 21/44 of the lessons observed, 47.7% of the observations made. Use of practical exercise or experiment would not have been appropriate in 23/44 of the lessons observed, 52.3% of the observations made. Most of the lessons observed in which practical exercises would not have been applicable were communication and socialization lessons which involved use of verbal skills. Thus, practical exercises or experiments would not have been applicable in these lessons.

(Method k) Seat-work and homework assignment. See Table 11.1 (d), column (k). None of the teachers gave any homework assignments to the students although teachers 6 and 10, in 1/3 of their lessons, discussed some of the things students should do while at home to assist their parents. Seat-work was used in 14/44 of the lessons observed. Teacher 11 used seat-work in 3/3 of the lessons observed, teachers 3 and 14 used seat-work in 2/3 of their lessons while teachers 1, 2, 4, 7, 8, 10, and 12, used seat-work in 1/3 of their lessons.

Table 11.1(d)
Presentation of New Materials (Section B)
Number 1: Delivery of New Information or Skills

Item	(j) Practical Exercise			(k) Seat work			(l) Game/ contest		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	1	2		1	2			3	
2	1	2		1	2			2	1
3	2	1		2	1		1	2	
4	2	1		1	2		1	2	
5	2	1			3		2	1	
6	2	1			3			3	
7	2	1		1	2			3	
8	1	2		1	2			2	1
9	2	1			3			2	1
10		3		1	2			3	
11	3			3				3	
12	1	1		1	1			2	
13	2	1			3			3	
14		3		2	1			3	
15		3			3		2	1	
Total	21	23	0	14	30	0	6	35	3
Percent	47.7	52.3	0	31.8	68.2	0	13.6	79.6	6.8

* Categories

1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

* All teachers were observed in three lessons except teacher 12 who was observed in two lessons.

Thus, seat-work was used in 14/44 of the lessons observed, 31.8% of the observations made. Seat-work was not used because it was not applicable in 30/44 of the lessons observed, 68.2% observations. As in practical exercise (method j), use of seat-work was not applicable in communication and socialization lessons. In addition, there was less use of seat-work in classes with lower functioning students than in those with higher functioning students.

(Method l) Game or contest. See Table 11.1 (d), column (l). Teachers 2, 8, and 9, did not engage their students in games or contests in 1/3 of their lessons when they would have been applicable. For example, if teacher 9 had used contest or game in an activity which involved naming utensils, students might have shown more interest in the lesson. Teachers 5 and 15 used games/contest in 2/3 of the applicable lessons while teachers 3 and 4 used contest in 1/3 of their lessons. Therefore, games and contests were used when applicable in 6/44 of the lessons observed, 13.6% of the observations made. Games/contests were not used when applicable in 3/44 of the lessons observed, 6.8% of the observations made. In all the other lessons observed, games/contests would not have been applicable. Use of contest/games in teaching may be included in an in-service course offered to teachers observed to encourage them to plan lessons in which the use of contest/game is applicable.

(m) Other observations and comments. See Table 11.1 (e), column (m). This category includes any other specific methods of instruction observed and additional comments on delivery of new information and/or skills. For example, teacher 4 taught a song about the letter "O" while teaching the vowel sound. Teacher 4 had other comments made on the use of instructional methods in 2/3 of the lessons while teachers 5 and 6 had other comments made in 1/3 of their lesson. Other comments were made in 4/44 of the lessons observed, 9.1% of the observations made. Other comments included the observation that songs were used as a means of teaching concepts in two of the lessons observed. The use of songs in all phases of instruction was very common in most of the lessons observed. Addition of items evaluating the use of music in instruction is recommended.

(n) Rating of the use of demonstration. See Table 11.1 (e), column (n), 1,2,3,& 4. Teachers were rated on their use of demonstration in each of the 44 lessons observed when demonstration would have been applicable. Teachers 1, 8, 9, and 14 never used demonstration (rating of 1) in 1/3 of their lesson when it was required while teacher 13 rarely demonstrated skills (rating of 2) in 1/3 lessons observed. Teachers demonstrated skills some of the time (rating of 3) in 12/44 of the lessons observed, 27% of the observations made. The rating of 3 was used when a teacher demonstrated in an adequate manner but left out some aspects which might have improved the demonstration of the skills. Teachers always demonstrated the skills when required in 23/44 of the lessons observed, 52.3% of the observations made. These ratings were made for each of the lessons observed and the ratings of 3 and 4 were analyzed as an indication that the teachers knew when to use demonstration in their lessons (hereafter referred to as satisfactory). Therefore, adequate demonstration was observed in 35/44 of the lessons, 79.6% of the observations made. Demonstration of skills was not applicable in 4/44 of the lessons observed, 9.1% of the observations made. Therefore, the teaching method was rated as unsatisfactory in 5/44 of the lessons observed, 11.4% of the observations made. There seems to be a need for

Table 11.1(e)
Presentation of New Materials (Section B)
Number 1: Delivery of New Information or Skills

Item	(m) Other observations	(n) Rating				
Rating		1 Never	2 Rarely	3 Some times	4 Always	5 NA
Teacher						
1		1		1	1	
2				1	2	
3					3	
4	2				3	
5	1			1	1	1
6	1				2	1
7				1	2	
8		1		2		
9		1		1	1	
10				3		
11				1	2	
12						2
13			1		2	
14		1		1	1	
15					3	
Total	4	4	1	12	23	4
Percent	9.1	9.1	2.3	27.3	52.	39.1

*Rating
1 Never uses method when required
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required
5 Not Applicable

prescriptive feedback to teachers 1, 8, 9, 13 and 14 but not for group in-service training as there were only 5/44 of the lessons observed (one lesson for five teachers) in which the teachers did not demonstrate skills adequately.

Summary. In delivery of new information and or skills teachers tended to use, when applicable, (a) demonstration (method a) used in 34/44 of the lessons observed, 77.3% of the observations made; (b) prepared hand-outs (method c) observed in 11/44 of the lessons observed, 25% of the observations made; (c) questioning to check understanding (method e) in 40/44 of the lessons observed, 90.9% of the observations made; (d) discussion (method g) was observed in 35/44 of the lessons observed in which it was applicable, 79.5% of the observations made; (e) drill (method i) was observed in 17/44 of the lessons observed, 38.6% of the lessons observed; (f) practical exercise and experiments (method j) were observed in 21/44 of the lessons observed, 47.7% of the observations made; and (g) seat-work (method k) was observed in 14/44 of the lessons observed, 31.8% of the observations made. All other instructional behaviours in this section were observed in less than 6/44 of the lessons observed. Teachers did not use the following methods to deliver information and skills when they would have be applicable: (a) demonstration (method a) in 3/44 of the lessons observed, 6.8% of the observations made; (b) prepared hand-outs (method c) in 2/44 lessons observed, 4.5% of the observations made; (c) media (method d) in 3/44 of the lessons observed, 6.8% of the observations made; (d) questioning to check students understanding (method e) in 1/44 of the lessons observed; (e) inviting and responding to students' questions (method f) in 3/44 of the lessons observed, 6.8% of the observations made; and (f) game/contest (method l) in 3/44 of the lessons observed, 6.8% of the observations made.

Number 2: Clarity of presentation of material

Table 11.2(a to d), indicates the number of lessons observed in which specific teachers exhibited or failed to exhibit instructional methods related to "clarity of presentation of material" when it was/was not appropriate to use these methods.

(Method a) Teacher repeats and/or reteaches skills or knowledge. See Table 11.2 (a), column (a), 1, 2, & 3. For example, teacher 11 in a lesson on drawing and colouring repeated the instructions when some students did not perform the skills correctly after the first set of instructions and demonstration. Teacher 11 retaught skills during 2/3 of the lessons observed. On the other hand, teacher 13 did reteach when applicable during 1/3 lessons observed but did not reteach students how to button a shirt although they indicated they had not mastered the skill. Teacher 13 did not repeat or reteach information in 2/3 lessons observed when students made consistent errors in responding to teacher questions. Teachers repeated or retaught skills or information in 30/44 of the lessons observed, 68.2% of the observations made. Repeating and reteaching skills and/or knowledge was not applicable in 12/44 of the lessons observed, 27.3% of the observations made. Thus, the use of this teaching method was insufficient in only 2/44 of the lessons observed. Teacher 13 requires prescriptive feedback on the use of repeating and reteaching information or skills as he/she displayed inadequate use of this method in 2/3 of the lessons observed.

(Method b) Lesson has built-in review. See Table 11.2 (a), column (b), 1, 2, & 3. Teacher 13 did not use a built-in review when applicable in 1/3 of the lessons observed. Teacher 13 used built-in review in 1/3 of the

Table 11.2(a)
Section B: Presentation of New Materials
Number 2: Clarity of Presentation of Material

Method	(a) Reteaches skills or knowledge			(b) Built-in review			(c) Explains concepts		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	1	2		1	2			3	
2	2	1		3				3	
3	1	2		3			1	2	
4	1	2		3			1	2	
5	2	1		1	2			3	
6	3			3			2	1	
7	3			3			1	2	
8	3			3				3	
9	3			3			1	2	
10	1	2			3			3	
11	2	1		1	2		1	2	
12	1	1		1	1		1	1	
13	1		2	1	1	1	1	2	
14	3			3			1	2	
15	3			2	1			3	
Total	30	12	2	31	12	1	10	34	0
Percent	68.2	27.3	4.6	70.5	27.3	2.3	22.7	77.3	0

* Category

1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

lessons observed in which built-in review was appropriate and did not use built-in review in 1/3 of the lessons in which built in review would not have been appropriate. Teacher 11 used a built-in review in one lesson when it was applicable and did not use built-in review when it was not applicable. Teachers had built-in review in 31/44 of the lessons observed, 70.5% of the observations made. Built-in review was not applicable in 12/44 of the lessons, 27.3% of the observations made. Built-in review was not observed when it would have been suitable in only 1/44 lessons, 2.3% of the observations made. In-service training in the use of built-in review is not necessary as this skill was used appropriately in 97.8% of the observations made.

(Method c) Teacher explains unfamiliar words and concepts. See Table 11.2 (a), column (b), 1, 2, & 3. Teachers, 3, 4, 7, 9, 11, 13, and 14 explained unfamiliar concepts in 1/3 of their lessons in which it was applicable. Teacher 2 used this method in 1/2 of the lessons observed and teacher 6 in 2/3 of the lessons observed in which it was applicable. In total, teachers explained unfamiliar words and concepts in 10/44 of the lessons observed, 22.7% of the observations made. Explanation of unfamiliar words and concept was not applicable in 34/44 of the lesson, 77.3% of the observations made as there were no unfamiliar words or concepts in these lessons observed. Thus, this method of teaching was used appropriately in all lessons observed.

(Method d) Teacher monitors students' understanding. See Table 11.2 (b), column (d), 1, 2, & 3. In this method teachers monitored students' understanding through questioning and other activities and adjusted the lesson to provide more clarity. For example, teacher 1, in the health education lesson on how to clean nails, did not ask the appropriate questions to monitor student understanding and enable her/his to modify her/his teaching methods. There were only 1/44 lessons observed in which monitoring of understanding was not observed and it was not applicable. Teachers monitored students understanding when it was applicable in 42/44 of the lessons observed, 95.5% of the observations made.

(Method e) Vocabulary at students' level of understanding. See Table 11.2 (b), column (e), 1, 2, & 3. Teachers used vocabulary at students' level of understanding in all the 44/44 lessons observed, 100% of the observations made.

(Method f) Teacher avoids the use of distracters. See Table 11.2 (b), column (f), 1, 2, & 3. In this method, the teachers were observed as to whether they used distracters such as "ee," "mm," and "sawa." These are kiswahili expressions which are commonly used in conversation which can distract students and do not enhance students' understanding. For example, teacher 2, in 1/3 of the lessons observed, used "sawa" in a distracting manner several times. Teachers 2, 4, 13, and 14 did not avoid distracters when it would have been appropriate in 1/3 of their lessons. Thus distracters were used in 4/44 of the lessons observed, 9.1% observation. As a group, teachers avoided the use of distracters as appropriate in 40/44 of the lessons observed, 90.9% of the observations made. In-service training in this area is not required but the four teachers who used distracters should be provided prescriptive feedback.

(Method g) Teachers' rate of speech is appropriate. See Table 11.2 (c), column (g), 1, 2, & 3. The observed teachers used a rate of speech which the students had no problem keeping up with in 44/44 of the lessons observed. Thus, in 100% of the observations made, students were able to keep up with teachers' instructions.

Table 11.2(b)
Section B: Presentation of New Materials
Number 2: Clarity of Presentation of Material

Method	(d) Monitors understanding			(e) Appropriate Vocabulary level			(f) Avoids distracters		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	2		1	3			3		
2	3			3			2		1
3	3			3			3		
4	3			3			1	1	1
5	3			3			3		
6	3			3			2	1	
7	3			3			3		
8	3			3			3		
9	3			3			3		
10	3			3			3		
11	3			3			3		
12	2			2			2		
13	3			3			2		1
14	3			3			2		1
15	2	1		3			3		
Total	42	1	1	44	0		38	2	4
Percent	95.5	2.3	2.3	100	0		86.4	4.6	9.09

* Category

1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

Table 11.2(c)
Section B: Presentation of New Materials
Number 2: Clarity of Presentation of Material

Method	(g) Appropriate rate of speech			(h) Good enunciation			(i) Checks understanding		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3			3			2	1	
2	3			3			3		
3	3			3			3		
4	3			3			3		
5	3			3			2	1	
6	3			3			3		
7	3			3			3		
8	3			3			3		
9	3			3			3		
10	3			3			2	1	
11	3			3			3		
12	2			2			1	1	
13	3			3			1	1	1
14	3			3			3		
15	3			3			2	1	
Total	44	0	0	44		0	37	6	1
Percent	100	0	0	100		0	84.1	13.6	2.3

* Category

1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

(Method h) Teacher used good enunciation. See Table 11.2 (c), column (h), 1, 2, & 3. Teachers used good enunciation in all of the 44 lessons observed. Thus, all of the teachers seemed to be conversant with appropriate pronunciation in Kiswahili which was the language of instruction used in all lessons observed.

(Method i) Teacher checks students' understanding before moving to the next part of the lesson. See Table 11.2 (c), column, (i) 1, 2, & 3. Teacher 13 did not check understanding in 1/3 of the lessons observed, in which it would have been applicable. In this lesson, teacher 13 did not check students' ability to align buttons with correct buttonholes before attempts to button the shirt were made. In 6/44 lessons checking for understanding before moving to the next activity was not necessary. For example, teacher 15, in a physical education lesson where the purpose was to have students perform physical activity, did not have to check students understanding on the activities already performed as they had no bearing on performance of the activities which came next. Teachers checked for students understanding when it was applicable in 37/44 of the lessons observed, 84.1% of the observations made. Thus, students' understanding was not checked when applicable in only 1/44 of the lessons observed, 2.3% of the observations made. There is no need for either in-service training or prescriptive feedback as teachers seem conversant with the use of this method of instruction.

(Method j) Teacher draws attention to difficult points. See Table 11.2 (d), column (j), 1, 2, & 3. In this method observations were made as to whether teachers drew students' attention to difficult points in the lesson. Teacher 13 failed to draw students' attention to difficult points when it would have been appropriate in 2/3 of the lessons observed . For example, in a lesson where the purpose was to teach the students how to button a shirt, the teacher did not point-out the difficult part of matching the button with the corresponding buttonhole. Teachers drew attention to difficult points when it would have been appropriate in 21/44 of the lessons observed, 47.7% of the observations made. Teachers did not draw attention to important points in 21/44 lessons observed in which drawing attention was not appropriate. Therefore, teachers did not draw attention to difficult points when it was necessary in 2/44 of the lessons observed, 4.5% of the observations made. Teacher 13 should be provided with prescriptive feedback on drawing students' attention to difficult points.

(Method k) Teacher presents skills or information in small steps. See Table 11.2 (d), column (k), 1, 2, & 3. Teacher 13 did not present skill in small steps in 1/3 of the lessons observed. In the lesson discussed above (methods i & j), this teacher did not present the skill of buttoning a shirt in small steps. The observed teachers used small steps in the presentation of materials in 34/44 of the lessons observed, 77.3% of the observations made. Teachers did not use small steps in presentation of skills in 9/44 of the lessons observed in which use of small steps was not applicable. Teacher 13 should receive prescriptive feedback in presentation of skills in small steps.

(l) Other observations and comments. There were no other observations or comments made on the clarity of presentation of the materials.

(m) Rating of teachers clarity in the presentation of the materials. See Table 11.2 (e), column (m), 1, 2, 3, & 4. No teacher had a rating of 1 in any of the lessons observed while only one teacher in 1/3 lessons observed had a rating of 2. Thus, unsatisfactory ratings

Table 11.2(d)
Section B: Presentation of New Materials
Number 2: Clarity of Presentation of Material

method	(j) Attention to difficult points			(k) Presents skill in small steps		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher						
1	1	2			3	
2	1	2		2	1	
3	2	1		3		
4	1	2		3		
5	2	1		2	1	
6	2	1		3		
7	3			3		
8	1	2		3		
9	1	2		3		
10	1	2		1	2	
11	3			2	1	
12		2		1	1	
13		1	2	2		1
14	3			3		
15		3		3		
Total	21	21	2	34	9	1
Percent	47.7	47.7	4.5	77.3	20.5	2.27

Category	
1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

Table 11.2(e)
Section B: Presentation of New Materials
Number 2: Clarity of Presentation of Material

Method	(m) Rating			
Category	1 Never	2 Rarely	3 Sometimes	4 Always
Teacher				
1			1	2
2			2	1
3				3
4			2	1
5				3
6			1	2
7				3
8				3
9				3
10			1	2
11				3
12				2
13		1	1	1
14			3	
15			3	
Total	0	1	10	33
Percent	0	2.3	22.7	75

Rating
1 Never uses method when required
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required
5 Not Applicable

were received in only 1/44 of the lessons observed, 2.3% of the observations made. A rating of three was assigned to 10/44 of the lessons observed, 22.7% of the observations made, while 33/44 of the lessons observed, 75% of the observations made, received a rating of 4. There is no need to include methods of improving the clarity of the presentation of material in an in-service training course. However, prescriptive feedback should be provided for teacher 13 who had a rating of 2 in the clarity of presentation of materials. Teacher 2, 4, and 12 should also be given prescriptive feedback in avoiding distracters, while teacher 1 should receive prescriptive feedback in monitoring student understanding through questions.

Summary of use of methods which improve clarity of presentation of skills and materials. In clarity of presentation of the material, there were two observation sessions (4.5%) in which the teachers, a) failed to repeat or reteach information when students made consistent errors in responding to teacher questions, and b) failed to draw attention to difficult points, when it was necessary. In one observation session (2.3%), the teacher, a) did not use a built-in review, b) did not check for understanding before moving to the next part of the lesson, and c) did not present information or skills in small steps, when appropriate.

Number 3: Maintaining Attention

Table 11.3 shows the teachers' use of three methods of maintaining attention. Teachers' use of each of these methods is discussed below.

(Method a) Teacher asks the students questions whether they have their hands up or not (hereafter referred to as ask questions). See Table 11.3, column, (a) 1, 2, and 3. Teachers 7 and 13 failed to ask questions of both volunteers and non-volunteers when it would have been appropriate in 1/3 of the lessons observed. Therefore, there was only 2/44 of the lessons observed in which teachers did not use questioning to maintain attention when applicable. Teachers 1 and 11 did not ask questions in 1/3 of the lessons observed, as they were not applicable. Teachers used questioning effectively in maintaining attention in 40/44 of the lessons observed, 90.9% of the observations made. Therefore, there is no need for in-service training. However, teachers 7 and 13 should be provided with prescriptive feedback.

(Method b) Teachers use a variety of media. See Table 11.3, column (b), 1, 2, and 3. In this method, the use of a variety of media in order to maintain students' attention was observed. Teacher 7 did not use a variety of media when media would have been appropriate in 1/3 of the lessons observed. Teachers did not use a variety of media to maintain attention and it was not necessary in 16/44 lessons observed, 36.4% of the observations made. In total, teachers used a variety of media to maintain attention when use of media was appropriate in 27/44 of the lessons observed, 61.4% of the observations made.

(Method c) Teacher frequently changes instructional methods when it appears that the students' attention on an activity is diminishing (hereafter referred to as changes instructional method). See Table 11.3, column (c), 1, 2, and 3. Teachers 7 and 9 did not change instructional methods when it would have been appropriate in 2/3 of their lessons, while teachers 1, 8, and 13 did not change instructional methods in 1/3 of their lessons in which changing methods would have been appropriate. Thus, change of method of instruction did not occur when it would have been appropriate in 7/44 of the lessons observed, 15.9% of the observations made.

Table 11.3
Section B: Presentation of New Materials
Number 3: Maintaining Attention

Method	(a) Distributes questions among all			(b) Uses a variety of media			(c) Changes method of instruction frequently		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1*	2	1			3			2	1
2	3			3				3	
3	3			1	2		1	2	
4	3			1	2		1	2	
5	3			2	1			3	
6	3			2	1			3	
7	2		1	1	1	1		1	2
8	3			3				2	1
9	3			3			1		2
10	3			1	2		1	2	
11	2	1		2	1		1	2	
12	2			1	1		2		
13	2		1	3			2		1
14	3			2	1			3	
15	3			2	1		2	1	
Total	40	2	2	27	16	1	11	26	7
Percent	90.9	4.6	5.6	61.4	36.4	2.3	25	59.1	15.9

* Category

1	O/A	Observed and Applicable
2	NO/NA	Not Observed and Not Applicable
3	No/A	Not Observed but Applicable

* All the teachers were observed in three lessons except teacher 2 who was observed in two lessons.

Change of instructional methods occurred in 11/44 of the lessons observed, 25% of the observations made. It was not necessary for the teachers to change instructional methods in 26/44 of the lessons observed, 59.1% of the observations made, as attention did not diminish.

(Method d) Other observations and comments. No other observations were made in this section of the observation instruments.

Summary of data on maintaining attention. The observed teachers used questions and a variety of media in maintaining attention appropriately in all but 2.3% of the observations made. Teacher 7 and 13 did not use questions and did not use a variety of media in 1/3 of the lessons observed when applicable. Instructional methods were not changed when attention was diminishing in 7/44 of the lessons observed, 15.9% of the observations made. Changing of instructional methods when attention is diminishing should be included in an in-service course as 5/15 of the teachers demonstrated need for improvement of changing instructional methods when students attention starts to diminish. Teacher 7 should also receive prescriptive feedback as there were instances of inappropriate use of methods of maintaining attention.

Number 4: Level of Bloom's Taxonomy at Which the Material was Presented

Table 11.4 (a and b) shows the level of Bloom's taxonomy (level) at which the information and skills were presented. The knowledge and comprehension levels were observed separately, while higher levels of the taxonomy were grouped together.

(Method a) Knowledge level. See Table 11.4 (a), column (a), 1, 2, and 3. Presenting knowledge at this level involves the students' remembering, memorizing, recognizing and recalling information of the same form as

Table 11.4(a)
Section B: Presentation of New Material
Number 4: Level of Bloom's Taxonomy Used in Presentation of Information or Skills

Method	(a) Knowledge			(b) Comprehension			(c) Application and above		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3			1	2		1	2	
2	3			2	1		1	2	
3	3			1	2		1	2	
4	3			1	1	1	1	2	
5	3			2	1		2	1	
6	3			2	1		2	1	
7	3			3			3		
8	3			1	2		1	2	
9	3			1	2			3	
10	3			2	1		1	2	
11	3			1	2		1	2	
12	2				2			2	
13	3				3			3	
14	3			1	2		2	1	
15	3			1	2			3	
Total	44	0	0	19	24	1	16	28	0
Percent	100	0	0	43.2	54.5	2.3	36.4	63.6	0

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

initially taught. All the teachers presented skills and information at the knowledge level in all of the lessons observed.

(Method b) Comprehension level. See Table 11.4 (a), column (b), 1, 2, and 3. This level of the taxonomy involves students in interpreting, translating and describing information presented in class in their own words. Teacher 4 did not present information and skills at the comprehension level when necessary in 1/3 of the lessons observed. All teachers except teachers 12 and 13 presented skills and information at the comprehension level in one or more of the lessons observed. Skills and information were presented at the comprehension level in 19/44 of the lessons observed, 43.2% of the observations made. Presentation of information and skills at the comprehension level would not have been applicable in 24/44 of the lesson, 54.5% of the observations made.

(Method c) Application and other higher levels of Bloom's taxonomy (hereafter referred to as high levels). See Table 11.4 (a), column (c), 1, 2, and 3. The application level includes applying knowledge and skills to problems that are different from but parallel to those provided during instruction. High levels of Bloom's taxonomy were used in presentation of skills and information in 16/44 of the lessons observed, 36.4% of the observations made. In all the other lessons observed, high levels of Bloom's taxonomy would not have been applicable due to students' low levels of intellectual functioning. (Method d) Other observations and comments. See Table 11.4 (a), column (d), 1, 2, and 3. "Other observations" were made in 8/44 of the lessons observed, 18.2% of the observations made. The "other observations" included the following: some of the lessons observed involved motor activity in which high levels of the taxonomy would not have been applicable. For example, in a physical education lesson taught by teacher 5, it was not possible to present the gross motor exercises included in the lesson at high levels of Bloom's taxonomy.

(e) Rating of the use of the different level of Bloom's taxonomy in presentation of information and skills. See Table 11.4 (b), column (e), [i, ii, & iii]. In this section the ratings for the use of knowledge , comprehension, and higher levels of Bloom's taxonomy are discussed separately.

(i) Knowledge. See Table 11.4 (b), column (e), [(i) 1, 2, 3, & 4]. Teachers 5, 6, 7, 8, 10, and 11 had a rating of 3 in 1/3 of their lessons observed. In all the other lessons observed, teachers got a rating 4 for their use of the Knowledge level of Bloom's taxonomy. There was no rating of 1 or 2 in any of the lessons observed. Therefore, teachers got ratings of "3" and "4" for their presentation of material at the knowledge level of Bloom's taxonomy in all 44/44 of the lessons observed, 100% of the observations made.

(ii) Comprehension level. See Table 11.4 (b), column (e), [(ii) 1, 2, 3, & 4]. All the teachers who presented skills at the comprehension level had a rating of 3 in all the lessons observed. Thus, all the 19/44 of the lessons observed in which comprehension was used were rated as satisfactory.

(iii) Application and higher level of Bloom's taxonomy. See Table 11.4 (b), column (e), [(iii) 1, 2, 3, & 4]. Teacher 7 had a rating of 2 indicating unsatisfactory performance while the rest of the lessons observed had a rating of 3 which is satisfactory. Thus, 15 of the 16 lessons observed in which higher levels were used in the presentation of the material were rated as satisfactory.

Table 11.4(b)
Section B: Presentation of New Material
Number 4: Level of Bloom's Taxonomy Used in Presentation of Information or Skills

Method	(d) Other			(e) Rating (i) Knowledge			
Category	1* O/A	2* NO/NA	3* NO/A	1 Never	2 Rarely	3 Sometimes	4 Always
Teacher							
1	1						3
2							3
3							3
4							3
5						1	2
6	1					1	2
7						1	2
8	1					1	2
9							3
10						1	2
11	2					1	2
12							2
13	3						1
14							3
15							3
Total	8	0	0	0	0	6	36
Percent	18.2	0	0	0	0	13.6	81.8

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Summary of data on teachers' use of Bloom's taxonomy in the presentation of information and skills. The knowledge level was used in all of the lessons observed, while comprehension level was used in 43.2% of the observations made while high levels were used in 36.4% of the observations made. There was only one lesson (1/44 of the lessons observed) in which use of the various levels of Bloom's Taxonomy was rated as inappropriate. The researcher felt that restricted use of the higher levels of Bloom's taxonomy is suitable due to the low levels of students' intellectual functioning.

Number 5: Sequencing of Content of Instruction

Teachers' sequencing of content of instruction was observed and recorded in this segment of the observation instrument. Table 11.5 (a & b), shows the number of lessons observed in which these methods were observed. The observations are discussed below.

(Method a) Materials at lower levels of Bloom's taxonomy were presented before materials at higher levels. See Table 11.5 (a), column (a), 1, 2, and 3. Materials at lower levels of Bloom's taxonomy were presented before materials at higher levels in 21/44 of the lessons observed, 47.7% of the observations made. This method was not applicable for the other 23/44 of the lessons observed, 52.3% of the observations made as material was presented at one level of Bloom's taxonomy.

(Method b) Teacher moves from concrete to abstract. See Table 11.5 (a), column (b), 1, 2, and 3. The teachers' sequencing of content of instruction to move from concrete to abstract was recorded. This method involved sequencing of instruction such as moving from hands-on to symbols, or blocks to numerals. This teaching method was observed in 11/44 of the lessons observed, 25% of the observations made. Teacher 8 did not sequence instruction from concrete to abstract when

Table 11.5(a)
Section B: Presentation of New Materials
Number 5: Sequencing the Content of Instruction

Method	(a) Low levels of Bloom's Taxonomy presented first			(b) From concrete to abstract			(c) Old content presented before new content		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	1	2			3		1	2	
2	2	1		2	1		2	1	
3	2	1		1	2		2	1	
4	2	1		1	2		1	2	
5	1	2			3		1	2	
6	2	1		2	1		1	2	
7	3			1	2		3		
8	1	2		1	1	1	1		2
9	1	2			3		3		
10	2	1		1	2		1	2	
11	1	2		2	1		3		
12		2			2		1	1	
13		3			3		2	1	
14	2	1			3		1	2	
15	1	2			3		1	2	
Total	21	23	0	11	32	1	24	18	2
Percent	47.7	52.3	0	25	72.7	2.3	54.5	40.9	4.6

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

applicable in 1/3 of the lessons observed, 2.3% of the observations made. Sequencing of instruction from concrete to abstract was not applicable in 32/44 of the lessons observed, 72.7% of the observations made. This was because most of the students involved in the lessons observed had low intellectual functioning and consequently, could not be expected to handle abstract ideas.

(Method c) Moves from content of previous instruction to new content. See Table 11.5 (a), column (c), 1, 2, and 3. Teachers move from content of previous instruction to new content in 24/44 of the lessons observed, 54.5% of the observations made. Teacher 8 did not move from content of previous instruction to new content when applicable in 2/3 of the lessons observed. Therefore, this method was not observed when applicable in 2/44 of the lessons, 4.6% of the observations made. In the other 18/44 of the lessons observed, 40.9% of the observations made, sequencing of content of instruction in this manner was not applicable. The lessons observed in which moving from content of previous instruction to new content was not applicable were generally communication lessons.

(Method d) Relates students' personal experience to new content. See Table 11.5 (b), column (d), 1, 2, and 3. Teachers related students' personal experience to new content in 29/44 of the lessons observed, 65.9% of the observations made. This method of instruction was not applicable in 14/44 of the lessons observed, 31.8% of the observations made. Teacher 8 did not relate students' personal experience to new content when it would have been applicable in 1/3 of the lessons observed. Thus, there was inappropriate use of this method of instruction in 1/44 of the lessons observed, 2.3% of the observations made.

(Method e) Moved from oral to written. See Table 11.5 (b), column (e), 1, 2, and 3. The group of teachers observed moved from oral to written work in presentation of material in 11/44 of the lessons, 25% of the observations made. This method of sequencing was not applicable in 33/44 of the lessons observed, 75% of the observations made. There were no instances of inappropriate use of this method of instruction.

(Method f) Ends by summarising main points. See Table 11.5 (b), column (f), 1, 2, and 3. In this method, the use of closure was observed and recorded. Observed teachers ended lesson by summarising the main points in 21/44 of the lessons observed, 47.7% of the observations made. These teachers did not use summary in 17/44 of the lessons observed, 38.6% of the observations made as it was not applicable. Teacher 8 did not end by summarising the main points when it would have been applicable in 2/3 of the lessons observed, while teachers 7, 9, and 14 did not use the method when appropriate in 1/3 of their lessons. Thus, teachers failed to end the lesson with a summary when it would have been suitable in 5/44 of the lessons observed, 11.4% of the lessons.

(g) Other Observations and comments. No methods of sequencing of content of instruction, other than those present above in methods a to f, were used in the lessons observed. Furthermore, this teacher did not move from previously learned material to new content or end the lesson by summarising important points in 2/3 of the lessons observed. Teachers 7, 9, and 14 did not end their lessons by summarising main points when it would have been appropriate in 1/3 of their lessons. Thus, teacher 8 did not exhibit four techniques of sequencing content of instruction when it would have been appropriate. Ending lesson by providing a summary of important points did not occur when applicable in 5/44 of

Table 11.5(b)
Section B: Presentation of New Materials
Number 5: Sequencing the content of instruction

Method	(d) Relate to student personal experiences			(e) Presents from oral to written			(f) Summarizes main points		
Category	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3			1	2		1	2	
2	3			1	2		3		
3	1	2		1	2		3		
4	3			1	2		3		
5	2	1		1	2		1	2	
6	3				3		3		
7	1	2		2	1		1	1	1
8	1	1	1	1	2		1		2
9	3				3		1	1	1
10	2	1			3		1	1	
11	1	2		2	1			3	
12		2			2			2	
13	3				3			3	
14		3		1	2			2	1
15	3				3		3		
Total	29	14	1	11	33	0	21	17	5
Percent	65.9	31.8	2.3	25	75	0	47.7	38.6	11.4

Category

1	Observed and Applicable
2	Not Observed and Not Applicable
3	Not Observed but Applicable

the lessons observed, 11.4% of the observations made. Therefore, teacher 8 should be provided with prescriptive feedback in the four methods in which she exhibited inadequacy. In addition, an in-service on ending lessons by providing a summary should be provided for the teachers.

Section C: Monitoring Students' Understanding

Section C deals with methods used in monitoring students' understanding. These methods come under the following headings: 1) "teacher's techniques of monitoring students understanding;" 2) "questioning techniques used;" 3) "handling incorrect answers;" and 4) "handling students who do not respond to questions." The data from the observation of the use of these methods is presented below.

Number 1: Teacher's Techniques of Monitoring Students' Understanding

Table 12.1 (a & b) shows the number of lessons observed in which the teachers used each of the following four techniques of monitoring students' understanding.

(Method a) Teacher asks questions to monitor students' understanding (hereafter referred to as asked questions). See Table 12.1 (a), column (a), 1, 2, and 3. Teachers asked questions to monitor student understanding in all the lessons observed. Following are ratings of the teachers' frequency of use of questions. Teachers 4 and 6 had a frequency rating of 3 in 1/3 of their lessons, while teacher 14 received a frequency rating of 3 in 2/3 of the lessons observed. Therefore, a frequency rating of three was received in 4/44 of the lessons observed, 9.1% of the observations made and a rating of 4 in 40/44 of the lessons observed, 90.9% of the observations made. Hence, teachers used questions to monitor understanding appropriately in all the observed lessons.

Table 12.1(a)
Section C: Monitoring Student Understanding
Number 1: Techniques for Monitoring Student Understanding

Method	(a) Asks questions to monitor understanding				(b) Question level on Blooms Taxonomy (i) Knowledge			(ii) Comprehension		
Category Rating	1* Never	2* rarely	3* Some times	4 Always	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher										
1				3	3			1	2	
2				3	3			2	1	
3				3	3			3		
4			1	2	3			3		
5				3	3			1	2	
6			1	2	3			1	2	
7				3	3			3		
8				3	2	1		2	1	
9				3	3			1	2	
10				3	3			2	1	
11				3	3			2	1	
12				2	2				2	
13				3	3				3	
14			2	1	3			1	2	
15				3	1	2			2	1
Total	0	0	4	40	41	3	0	22	21	1
Percent	0	0	9.1	90.9	93.2	6.8	0	50	47.7	2.3

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*Category: 1 O/A Observed and Applicable. 2 NO/NA Not Observed and Not Applicable 3 NO/A Not Observed but Applicable
*Rating: 1. Never uses method when required. 2. Rarely uses method when required 3. Sometimes uses method when required. 4. Always uses method when required. 8. Not Applicable.

(Method b) Teacher asks questions at the different levels of Bloom's taxonomy. See Table 12.1 (a), column (b), i, ii, and iii. In this method teachers' use of questions at different levels of Bloom's taxonomy are discussed in three parts; i) knowledge level, ii) comprehension level and, iii) application and higher levels of the taxonomy.

(i) Knowledge level [Table 12.1 (a), column (b), i 1, 2, and 3] involves questions which require students to remember, memorize, recognize and recall information. Questions to monitor students' understanding were asked at the knowledge level when appropriate in all the 44 lessons observed.

(ii) Comprehension level. See Table 12.1 (a), column (b), ii 1, 2, 3, and 4. Questions at this level involve students in interpreting, translating, extrapolating and describing in their own words. Teachers 1, 5, 6, 9, and 14 asked questions at this level when applicable in 1/3 of their lessons. Teachers 2, 8, 10, and 11 asked questions at this level in 2/3 of their lessons while teachers 3, 4 and 7 used third level in all 3/3 of their lessons. Only one teacher, 15, did not ask questions at this level in 1/3 of the lessons observed when applicable. In total, questions were asked at this level when applicable in 22/44 of the lessons observed, 50% of the observations made. Asking questions at this level was not applicable in 20/44 of the lessons observed, 45.5% of the observations made.

(iii) Application and higher levels [Table 12.1 (a), column (b), iii, 1, 2, 3, & 4] of the taxonomy require students to engage in problem solving and applying information to produce some results as well as analysis, synthesis and evaluation of information. Teacher 7 asked questions at high levels in 3/3 of the lessons observed, teachers 3, 4 and 14 asked questions in 2/3 of their lessons. Teachers 2, 5, 6, 8, and 10 asked questions at these levels of the taxonomy in 1/3 of their lessons in which they were applicable. In total, teachers asked questions at high levels of Bloom's Taxonomy in 14/44 of the lessons observed, 31.8% of the observations made. Questions at high levels would not have been applicable in 30/44 of the lessons observed, 65.97% of the observations made. In summary, questions at this level were asked in all the lessons observed in which they would have been applicable. Therefore, teachers seem to be competent in the appropriate use of this questioning technique.

(Method c) Questions are distributed among all students both those who volunteer and those who do not. See Table 12.1 (b), column (c), 1, 2, and 3. For example, teacher 14 had one student read almost all the words on flash cards as he was the best reader in the class in 1/3 of the lessons observed. Failure to distribute questions among all students was observed in only 1/44 of the lessons, 2.3% of the observations made. Questions were distributed among all students in 43/44 of the lessons observed, 97.7% of the observations made. Prescriptive feedback should be provided to teacher 14 on the use of this method.

(d) Other observations and comments. There were no other observations or comments about teachers use of techniques of monitoring students' understanding.

Summary of data on teachers' use of techniques of monitoring students' understanding. Observed teachers received a rating of 4 in 90.9% of the observations made and a rating of 3 in 9.1% of the observations made for their use of questions to monitor students' understanding. Teachers asked questions at the knowledge

Table 12.1 (b)
Section C: Monitoring Student Understanding
Number 1: Techniques for Monitoring Student Understanding

Method	(b) Question level on Bloom's taxonomy (iii) Application			(c) Distributes questions among all		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher						
1		3		3		
2	1	2		3		
3	2	1		3		
4	2	1		3		
5	1	2		3		
6	1	2		3		
7	3			3		
8	1	2		3		
9		3		3		
10	1	2		3		
11		3		3		
12		2		2		
13		3		3		
14	2	1		2	1	
15		3		3		
Total	14	30	0	43	1	0
%	31.8	68.2	0	97.7	2.3	0

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

level in 100% of the observations made while questions were asked at the comprehension level in 50% of the observations made. Questions were asked at application and higher levels of the taxonomy in 31.8% of the observations made. Teachers distributed questions among all students in 97.7% of the observations made. There was only one lesson in which the techniques of monitoring student understanding were not used appropriately. The data in this section indicate that the observed teachers are competent in the use of questions at different levels of the Taxonomy. Teacher 14 should be provided with prescriptive feedback of distributing question to students whether they have their hand up or not.

Number 2: Questioning Techniques Used

Table 12.2 (a & b) shows data on teachers' use of six questioning techniques used to monitor students' understanding. The six questioning techniques are discussed below.

(Method a) Teacher asks one questions at a time and waits before asking for a response. See Table 12.2 (a), column (a), 1, 2, and 3. All of the teachers used this questioning technique in all the lessons observed.

(Method b) Teacher corrects students' mistakes consistently and immediately. See Table 12.2 (a), column (b), 1, 2, and 3. The observed teachers corrected mistakes consistently and immediately in all the lessons observed.

(Method c) Teacher praises frequently and gives positive feedback when students' responses are correct. See Table 12.2 (a), column (c), 1, 2, and 3. For example, teacher 8 moved to the next question or activity without providing praise or positive feedback after students gave the correct answer in all three lessons observed. Teacher 8 did not use frequent praise and positive feedback in all 3/3 of the lessons observed

Table 12.2(a)
Section C: Monitoring Student Understanding
Number 2: Questioning Techniques Used

Method	(a) Asks one question at a time			(b) Corrects errors immediately			(c) Frequent praise and positive feedback		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3			3			3		
2	3			3			3		
3	3			3			3		
4	3			3			3		
5	3			3			3		
6	3			3			2		1
7	3			3			2		1
8	3			3					3
9	3			3			3		
10	3			3			3		
11	3			3			3		
12	2			2			2		
13	3			3			3		
14	3						3		
15	3			3			3		
Total	44	0	0	44	0	0	39	0	5
Percent	100	0	0	100	0	0	88.6	0	11.4

* Category	
1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

while teachers 6 and 7 did not give positive feedback in 1/3 of their lessons in which it would have been applicable. Thus, teachers did not give feedback and praise when applicable in 5/44 of the lessons observed, 11.4% of the observations made. Teachers used praise and feedback in all the other 39/44 of the lessons observed, 81.8% of the observations made. Appropriate use of praise and feedback was observed in most of the lessons observed.

Method d) Teacher states questions clearly and concisely. See Table 12.2 (b), column (d), 1, 2, and 3. All teachers asked questions clearly and concisely in all the lessons observed.

(Method e) Teacher uses age-appropriate language when questioning. See Table 12.2 (b), column (e), 1, 2, and 3. All the questions asked in the lessons observed were in age-appropriate language.

(Method f) Teacher attends to responding student. See Table 12.2 (b), column (f), 1, 2, and 3. All the teachers attended to responding students in all the lessons observed.

(g) Other observations and comments. There were no other observations or comments made about the questioning techniques of the teachers.

Summary of the data on teachers' questioning techniques. Teachers exhibited appropriate questioning techniques in 100% of the observations made in five of the six questioning techniques (methods a to f). Teachers failed to provide frequent praise and positive feedback in 11.4% of the observations made. Therefore, prescriptive feedback should be provided to the three teachers who failed to use praise and positive feedback.

Table 12.2(b)
Section C: Monitoring Student Understanding
Number 2: Questioning Techniques Used

Method	(d) Clear and concise questions			(e) Uses age-appropriate language			(f) Attends to responding student		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3			3			3		
2	3			3			3		
3	3			3			3		
4	3			3			3		
5	3			3			3		
6	3			3			3		
7	3			3			3		
8	3			3			3		
9	3			3			3		
10	3			3			3		
11	2	1		3			3		
12	2			2			2		
13	3			3			3		
14	3			3			3		
15	3			3			2		
Total	43	1	0	44	0	0	44	0	0
Percent	97.7	2.3	0	100	0	0	100	0	0

*Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Number 3: Handling Incorrect Answers

Table 12.3, indicates, the number of lessons observed in which each method of handling incorrect answers was used.

(Method a) Teacher rephrases questions. See Table 12.3, column (a), 1, 2, and 3. Teachers 8, 14, and 15 did not rephrase questions when rephrasing would have been appropriate in 2/3 of their lessons. Teachers rephrased questions in 30/44 of the lessons observed, 68.2% of the observations made. Rephrasing questions would not have been applicable in 8/44 of the lessons observed, 18.2% of the observations made. Therefore, teachers failed to rephrase questions when it would have been appropriate in 6/44 of the lessons observed, 13.6% of the observations made.

(Method b) Teacher asks similar but simpler question. See Table 12.3, column (b), 1, 2, and 3. Teachers 8, 14, and 15 failed to ask similar but simpler questions in 2/3 of their lessons while teacher 1 failed to do the same in 1/3 of the lessons observed. Simpler questions were asked in 28/44 of the lessons observed, 63.6% of the observations made. It was not necessary to use simpler questions in 7/44 of the lessons observed, 15.9% of the observations made. Thus, teachers did not use simpler questions when necessary in 7/44 of the lessons observed, 15.9% of the observations made.

(c) Other observations made or comments. See Table 12.3, column (c), 1, 2, and 3. Other observations and comments on teachers' handling of students' incorrect responses were observed in 13/44 of the lessons, 29.5% of the observations made. Other observed methods, which were inappropriate, were observed in 3/44 of the lessons, 6.8% of the observations made.

Table 12.3
Section C: Monitoring Student Understanding
Number 3: Handling Incorrect Answers

Method	(a) Rephrases questions			(b) Asks similar but simpler questions			(c) Other		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	2	1		2		1	3		
2	3			3					
3	3			2	1		1		
4	3			3					
5	3			3					1
6	3			3			1		
7	2	1		1	1	1	2		
8	1		2	1	2				1
9	3			3					
10	3			3					
11	1	2		1	2				
12	1	1			2				1
13	1	2		2	1		1		
14	1		2	1		2	1		
15		1	2		1	2	3		
Total	30	8	6	28	10	6	13	0	3
Percent	68.2	18.2	13.6	63.6	22.7	13.6	29.5	0	6.8

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Summary of teachers' handling of incorrect answers. Teachers handled incorrect answers appropriately in most of the lessons observed. However, there were a few instances when incorrect answers were not handled appropriately. Teachers failed to rephrase questions in 13.6% of the observations made and did not ask simpler questions in 15.9% of the observations made. Other inappropriate methods were observed in 6.82% of the observations made.

Number 4: Handling Students Who Do Not Respond to Questions - Teacher Used the Following Cues

Table 12.4 (a & b) shows the frequency with which teachers used cues to lead students to correct performance. Types of cues used are discussed below.

(Method a) Gives students verbal clues to help them come up with appropriate responses. See Table 12.4 (a), column (a), 1, 2, and 3. For example, teacher 14, in a reading lesson, did not provide verbal cues to students to elicit appropriate responses when students had problems reading words on flash cards. Teacher 14 did not give verbal cues when they would have been applicable in 1/3 of the lessons observed. Thus, verbal cues were not provided when applicable in 1/44 of the lessons observed, 2.3% of the observations made. Verbal cues were not applicable in 1/44 of the lessons observed, 2.3% of the observations made. In total, teachers gave students verbal cues to elicit appropriate responses in 42/44 of the lessons observed, 95.5% of the observations made. Teachers' use of this teaching method was appropriate in all but one lesson.

(Method b) Uses gestural cues. See Table 12.4 (a), column (b), 1, 2, and 3. For example, if a student has been taught how to grate coconut using "mbuzi," the traditional tool used for grating coconut, the instructor can make appropriate movements with the hands to remind

Table 12.4(a)
Section C: Monitoring Student Understanding
Number 4: Handling Students Who Do Not Respond to Questions

Method	a) Gives verbal clues			b) Uses gestural cues			c) Uses physical cues		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3			1	2		1	2	
2	3			2	1		2	1	
3	2	1		2	1		1	2	
4	3			3			1	2	
5	3			2	1		1	2	
6	3			2	1			3	
7	3			2	1		2	1	
8	3				2	1		3	
9	3			2	1		1	2	
10	3			1	2		2	1	
11	3			2	1		3		
12	2			2			1	1	
13	3			3				3	
14	2		1	2		1		3	
15	3			3			1	2	
Total	42	1	1	29	13	2	16	28	0
Percent	95.5	2.3	2.3	65.9	29.5	4.6	36.4	63.6	0

*Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

the students how to use the tool. An example observed is that of teacher 9 who in a health education lesson gestured to remind students how to brush their teeth. Teachers 8 and 14 did not use gestural cues when they would have been applicable in 1/3 of their lessons. Teachers used gestural cues in 29/44 of the lessons observed, 65.9% of the observations made; while gestural cues were not applicable in 13/44 of the lessons observed, 29.5% of the observations made. Thus, this teaching method was used inappropriately in only 2/44 of the lessons observed, 4.6% of the observations made.

(Method c) Uses physical cues. See Table 12.4 (a), column (c), 1, 2, and 3. In the example of grating coconut given above, the instructor could have placed his hands on the students' hands to prompt the students' response. An example observed is that of teacher 2 in an art lesson where the teacher held the students' hands while they cut shapes on pieces of paper. Teachers 1, 3, 4, 5, 9, and 15, used physical cues in 1/3 of their lessons while teacher 12 used this method in 1/2 of the lessons observed. Teachers 2, 7, and 10, used physical cues in 2/3 of their lessons while teacher 11 used physical cues in all 3/3 of the lessons observed. In total, teachers used physical cues in 16/44 of the lessons, 36.4% of the observations made. Physical cues were not applicable in 28/44 of the lessons observed, 63.6% of the observations made.

(Method d) Provides answer and moves to another question. See Table 12.4 (b), column (d), 1, 2, and 3. For example, teacher 12 did not provide the answer and move on in a religious and moral education lesson. This behaviour caused lack of continuity as well as diminishing of attention as the teacher continued to probe the students for the correct answers for a long time. Teacher 12 did not answer a

Table 12.4(b)
Section C: Monitoring Student Understanding
Number 4: Handling Students Who Do Not Respond to Questions

Method	d) Provides answer and moves on			(e) Asks another student to answer			(f) Other observations and comments		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1		3		2	1				
2		3		3					
3		3		3					
4		3		3					
5	2	1		1	2		1		
6		3		3					
7	1	2		2	1				1
8		3		1	1	1			
9	1	2		3					
10		3		2	1				
11	3		1	2					
12		1	1	2					
13	1	2		3					
14		3		2		1			
15	1	2		2	1				
Total	6	37	1	33	9	2	1	0	1
Percent	13.6	84.1	2.3	75	20.5	4.6	2.3	0	2.3

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

question and move on when it would have been appropriate in 1/2 of the lessons observed. Teachers 7, 9, 13, and 15 provided answers and went to another question in 1/3 of their lessons while teacher 5 did the same in 2/3 of the lessons observed. In total, teachers used this method in 6/44 of the lessons, 13.6% of the observations made. This method was not applicable in 37/44 of the lessons observed, 84.1% of the observations made. Thus, teachers did not provide answers and move on when appropriate in 1/44 of the lessons observed, 2.3% of the observations made.

(Method e) Asks another student to answer question. See Table 12.4 (b), column (e), 1, 2, and 3. For example teacher 14 insisted on students' producing correct response with no cues even when it was apparent students had no clue as to how to tackle the reading task. Providing cues and/or asking other students to answer the question could have reduced the time wasted and students' frustration. Teachers 8 and 14, did not ask other students to answer questions when it would have been appropriate in 1/3 of their lessons. Thus, teachers did not ask another student to answer when it would have been appropriate in 2/44 of the lessons observed, 4.6% of the observations made. Teachers asked another student to answer in 33/44 of the lessons observed, 75% of the observations made. This instructional method was not applicable in 9/44 of the lessons observed, 20.7% of the observations made.

(f) Other observations or comments. See Table 12.4 (b), column (f), 1, 2, and 3. Teacher 7 repeated the same question several times each time adding cues until the students answered the question correctly.

Summary of teachers' use of techniques of handling students who do not respond to questions. In general, teachers in most lessons observed handled appropriately students who did not respond to questions. However, verbal cues were not used when appropriate in 2.3% of the observations made while gestural cues were not used when appropriate in 4.6% of the observations made. Physical cues were used appropriately in all lesson observed. Teachers did not answer questions and move on in 2.3% of the observations made, whereas teachers did not ask someone else to answer the questions when it would have been appropriate in 4.6% of the observations made. Teacher 14 did not use three techniques in this section when appropriate, teacher 8 did not use two techniques while teachers 3 and 12 did not use one. Hence, prescriptive feedback should be provided to these four teachers.

Section D: Guided Practice

Section D deals with teachers' provision of time for guided practice and the instructional methods used during time for guided practice.

Number 1: Does the Teacher Provide Time for Guided Practice

Table 13.1 shows the frequency of ratings given to teachers for their provision of time for guided practice.

Yes. Teacher provided time for guided practice. See Table 13.1, column "yes". The teachers provided time for guided practice in 42/44 of the lessons observed, 95.5% of the observations made. The ratings of the frequency of the use of guided practice in each of the lessons observed are presented below. Teacher 13 got a rating of 2 in 1/3 of the lessons observed. Teachers, 1, 3, 4, 5, 8, 9, and 13 got a rating of 3 in 1/3 of the lessons observed while teacher 14 had such a rating in 2/3 of the lessons observed. Thus, teachers got a rating of 3 in 9/44 of the lessons observed, 20.5% of the observations made. A rating of 4 was assigned to 32/44 of the lessons observed. There was only 1/44 of the lessons observed in which the teachers' frequency of provision of guided practice had a rating of 2.

No. Teacher did not provide time for guided practice. See Table 13.1, column "No". Teachers 6 and 12 did not provide time for guided practice in 1/3 of the lessons observed.

Other. There were no other observations related to the provision of time for guided practice.

Summary of teachers' provision of time for guided practice. Time was provided for guided practice in 95.45% of the observations made. Ratings of the provision of time for guided practice were satisfactory in all but 2.3% of these observations in which a rating of 2 was received. Therefore, prescriptive feedback should be provided to teacher 13 on the provision of time for guided practice.

Number 2: Teacher's Practices During Guided Practice Included the Following

This part of the observation instrument deals with six teaching practices teachers can use during a guided practice session. Table 13.2 (a & b) show the number of lessons observed in which different methods were used during time provided for guided practice and whether they were suitable. In the following discussion there will be no data on one lesson for both teachers 6 and 12 because they did not provide time for guided practice in these lessons. Teachers' use of each of the these practices is presented below.

(Method a) Uses prompt to elicit appropriate behaviour. See Table 13.2 (a), column (a), 1, 2, and 3. For example, appropriate behaviour may be elicited by using cues or hints such as gestural or verbal hints of the required response. Teacher 14 did not use prompts when appropriate in 1/3 of the lessons observed.

Table 13.1
Section D: Guided Practice
Number 1: Teacher Provides Time for Guided Practice

Item	Do teachers provide guided practice?				
	Yes			No	Other
Rating	2 Rarely	3 Sometimes	4 Always		
Teacher					
1		1	2		
2			3		
3		1	2		
4		1	2		
5		1	2		
6			2	1	
7			3		
8		1	2		
9		1	2		
10			3		
11			3		
12			1	1	
13	1	1	1		
14		2	1		
15			3		
Total	1	9	32	2	
Percent	2.3	20.5	72.7	4.6	

* Rating
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required

Note: The figures represent the number of lessons in which the instructional technique was observed.

Table 13.2(a)
Section D: Guided Practice
Number 2: Teachers Practices During Guided Practice

Item	(a) Uses prompts			(b) Fades prompts			(c) Frequent practice		
Category	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3				2	1	2		1
2	3			2		1	3		
3	3			1	2		3		
4	3			3			3		
5	3			3			3		
6	2	1		1	2		2	1	
7	3				3		3		
8	3			2	1		3		
9	3			1	2		3		
10	3			1	2		3		
11	3				1	2	3		
12	1	1			1	1	1	1	
13	3			2	1		3		
14	2		1	3			3		
15	3			2	1		3		
Total	41	2	1	21	18	5	41	2	1
Percent	93.2	4.6	2.3	47.7	40.9	11.4	93.2	4.6	2.3

* Category	
1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Teachers used prompts appropriately in 41/44 of the lessons observed, 93.2% of the observations made. Thus, prompts were not used when applicable in 1/44 of the lessons observed, 2.3% of the observations made.

(Method b) Fades prompts until no prompts are necessary for the performance of the skill. See Table 13.2 (a), column (b), 1, 2, and 3. Teachers 1 and 2 did not fade prompts in 1/3 of their lessons while teacher 11 did not fade prompts in 2/3 of the lessons observed. In addition, teacher 12 did not fade prompts in 1/2 of the lessons observed. Thus, teachers did not fade prompts as necessary in 5/44 of the lessons, 11.4% of the observations made. Teachers faded prompts appropriately in 21/44 of the lessons observed, 47.7 % of the observations made. Fading of prompts would not have been appropriate in 18/44 of the lessons observed, 40.9% of the observations made.

(Method c) Provides frequent practice. See Table 13.2 (a), column (c), 1, 2, and 3. Teacher 1 did not provide frequent feedback when it would have been appropriate in 1/3 of the lessons observed. In this health education lesson students could have benefited from more practice if they had been provided with more basins to clean their nails. Teachers provided frequent practice in 41/44 of the lessons observed, 93.2% of the observations made. Frequent practice was, therefore, not provided when applicable in 1/44 of the lessons observed, 2.3% of the observations made.

(Method d) Asks questions of all students. See Table 13.2 (b), column (d), 1, 2, and 3. Teacher 12 did not ask questions of all students when applicable in 1/2 of the lessons observed while teacher 14 did not do the same in 1/3 of the lessons. Teachers 6, 7, 11, 12, and 15, did not ask questions of all students during guided practice in 1/3 of the lessons observed as it would not have been appropriate. Teachers asked questions to all in 37/44 of the lessons observed, 84.1% of the observations made.

(Method e) Uses choral group response. See Table 13.2 (b), column (e), 1, 2, and 3. Teachers 7 did not use choral responses in 1/3 of the lessons observed when it would have been appropriate. Choral response was not applicable in 1/3 of the lessons observed taught by teachers 6, 8, 10, 12, and 15, and 2/3 of the lessons observed taught by teachers 7 and 11. In total, teachers used choral response in 34/44 of the lessons observed, 77.3% of the lessons observed.

(f) Other observations or comments. See Table 13.2 (b), column (f). Only teacher 7 had other observations or comments made in 1/3 of the lessons observed. In a mathematics lesson, teacher 7 taught the three students in the class individually and provided guided practice to each student individually.

(g) Rating the frequency with which the teachers used prompts to elicit performance from students. See Table 13.2 (c), column (f), 1, 2, 3, and 4. Teacher 6 could not be rated in 1/3 of the lessons observed and teacher 12 in 1/2 of the lessons observed as they did not provide time for guided practice. No teachers in any of the lessons observed got a rating of 1 or 2. Teachers got a rating of 3 in 18/44 of the lessons observed, 40.9% observation. Teachers got a rating of 4 in 24/44 of the lessons observed, 54.5% of the observations made. Hence, all the ratings for teachers use of prompts were satisfactory.

Summary of teachers practices during guided practice. Prompts were not used, nor was frequent practice provide or choral group response used when applicable in 2.3% observation. Prompts were not faded as necessary in 11.4% of the observation.

Table 13.2 (b)
Section D: Guided Practice
Number 2: Teachers Practices During Guided Practice

Item	(d) Asks questions of all			(e) Uses choral response			(f) Other comments
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	
Teacher							
1	3			3			
2	3			3			
3	3			3			
4	3			3			
5	3				3		
6	2	1		2	1		
7	2	1		1	2		1
8	3			2	1		
9	3			3			
10	3			2	1		
11	2	1		1	2		
12		1	1		1	1	
13	2		1	3			
14	3			3			
15	2	1		2	1		
Total	37	5	2	34	9	1	1
Percent	84.1	11.4	4.6	77.3	20.5	2.3	2.3

* Category	
1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Table 13.2 (c)
Section D: Guided Practice
Number 2: Teachers Practices During Guided Practice

Method	(g) Rating			
Rating	1* Never	2 Rarely	3 Sometimes	4 Always
Teacher				
1			1	2
2				3
3			2	1
4			1	2
5				3
6			2	
7			1	2
8			2	1
9			2	1
10			1	2
11			2	1
12			1	
13			1	2
14			1	2
15			1	2
Total	0	0	18	24
Percent	0	0	40.9	54.5

* Rating

1	Never uses method when required
2	Rarely uses method when required
3	Sometimes uses method when required
4	Always uses method when required

In addition, teachers did not ask questions of all students in 4.6% of the observations made. However, where guided practice was used, teachers' practices during guided practice were rated as satisfactory (ratings of 3 or 4).

Number 3: The Type of Reinforcement Used by the Teachers and Rating of its Use

Table 13.3 (a & b) show the rating of the use of different types of reinforcement. Each type of reinforcement is discussed next.

(Method a) Descriptive praise. See Table 13.3 (a), column (a), 1, 2, 3, 4, and 8. For example, saying to the child "I like the way you are working quietly at your desk" is giving descriptive praise. Teachers did not use descriptive praise when it would have been applicable in 20/44 of the lessons observed, 45.5% of the lessons. Of those lessons observed in which descriptive praise was used, the following ratings were obtained. Teachers 8, and 11 received ratings of 2 in 1/3 of their lessons while teacher 12 received the same rating in 1/2 of the lessons. Teachers got a rating of 3 in 13/44 of the lessons observed, 29.5% of the observations made and a rating of 4 in 6/44 of the lessons observed, 13.6% of the observations made. Consequently, unsatisfactory ratings (ratings of 2) were received in 3/44 of the lessons observed, 6.8% of the observations made. In addition, descriptive praise was not used when applicable in 45.5% of the observations.

(Method b) Social praise. See Table 13.3 (b), column (b), 1, 2, 3, 4, and 8. Examples of social praise include nodding and smiling. Teacher 7 did not use social praise in 3/3 of the lessons observed when it would have been appropriate. Teachers 8 and 9 had ratings of 2 in 1/3 of their lessons. Teachers received a rating of 3 in 12/44 of the lessons observed,

Table 13.3(a)
Section D: Guided Practice
Number 3: The Type of Reinforcement Used by The Teacher

Method	(a) Descriptive praise				
Rating	1* Never	2 Rarely	3 Sometimes	4 Always	8 NO/A
Teacher					
1			1		2
2					3
3					3
4			1		2
5				3	
6			1	1	
7				1	2
8		1			2
9			1		2
10			2		1
11		1	1	1	
12		1			
13			1	2	
14					3
15			2	1	
Total	0	3	13	6	20
Percent	0	6.8	29.5	13.6	45.5

Rating
1 Never uses method when required
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required
8 Not Observed but Applicable

27.3% of the observations made and a rating of 4 in 22/44 of the lessons observed, 50% of the observations made. Thus, teachers did not use when applicable in 3/44 of the lessons observed, 6.8 % of the observations made, while unsatisfactory ratings were observed in 5/44 of the lessons observed, 11.4% of the observations made.

(Method c) Social privileges. See Table 13.3 (c), column (b), 7 and 8. An example of social privileges is a chance to discuss something of interest with the teacher. Social privileges were not used in any of the lessons observed. Social privileges would not have been suitable in 5/44 of the lessons observed, 11.4% of the observations made. These lessons includes 1/3 of the lessons observed by teachers 1, 4, 11, 13, and 15. Teachers did not use social privileges when they were applicable in 37/44 of the lessons observed, 84.1% of the observations made.

(Method d) Food rewards. See Table 13.3 (c), column (b), 7 and 8. No food rewards were used in the lessons observed. Teachers 9 did not use such rewards when they would have been applicable in 2/3 of the lessons observed, while teacher 8 did not use food rewards when applicable in 1/3 of the lessons observed. Thus, food rewards were not used when applicable in 3/44 of the lessons observed, 6.8% observation. These three lessons were lessons taught to very low functioning students. Food rewards would not have been appropriate in 39/44 of the lessons observed, 88.6% of the observations made.

(Method e) Token rewards. See Table 13.3 (c), column (b), 7 and 8. Token rewards were not used as a way of reinforcing the students in any of the lessons observed. Token rewards would not have been appropriate in 8/44 of the lessons, 18.8% of the observations made. In summary, token rewards were not used when applicable

Table 13.3(b)
Section D: Guided Practice
Number 3: The Type of Reinforcement Used by The Teacher

Method	(b) Social praise				
Rating	1* Never	2 Rarely	3 Sometimes	4 Always	8 NO/A
Teacher					
1				3	
2				3	
3				3	
4				3	
5	3				
6				2	
7					3
8		1	2		
9		1	1	1	
10			1	2	
11			2	1	
12			1		
13			1	2	
14			3		
15			1	2	
Total	3	2	12	22	3
Percent	6.8	4.5	27.3	50	6.8

*Rating
1 Never uses method when required
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required
8 Applicable but not Observed

Table 13.3(c)
Section D: Guided Practice
Number 3: The Type of Reinforcement Used by The Teacher

Method	(c) Social privileges		(d) Food rewards		(e) Token rewards		(f) Other comments
Rating	7* NO/NA	8 NO/A	7 NO/NA	8 NO/A	7 NO/NA	8 NO/A	
Teacher							
1	1	2	3		2	1	
2		3	3		1	2	
3		3	3		1	2	
4	1	2	3		1	2	
5		3	3		1	2	
6		2	2			2	
7		3	3			3	
8		3	1	2		3	
9		3	2	1		3	
10		3	3		1	2	
11	1	2	3			3	
12		1	1			1	
13	1	2	3		1	2	
14		3	3			3	
15	1	2	3			3	
Total	5	37	39	3	8	34	0
Percent	11.4	84.1	88.6	6.8	18.2	77.2	0

* Rating
7 Not Applicable
8 Applicable but Not Observed
Note: The figures represent number of lessons in which the instructional technique was observed

in 34/44 of the lessons observed, 77.2% of the observations made.

(Method f) Other observations or comments. Teachers used clapping of hands in conjunction with congratulatory words as social praise in most lessons observed.

Summary of use of reinforcement during guided practice. Although the teachers that were observed reinforced students very frequently, i.e., students' clap hands for other students as reinforcement, these teachers did not use other types of reinforcements that would have been appropriate. Teachers did not use descriptive praise (praise describing the positive behaviour a student had performed) when applicable in 45.5% of the observations made, and when descriptive praise was used, 6.8% of the observations made, the praise was rated as unsatisfactory. Social praise was not used when applicable in 6.8% observation. Furthermore, when social praise was used, the teachers got a rating of 2 (rarely used social praise) in 4.6% of the observations made. Social privileges were not used when applicable in 88.6% observation and when used, unsatisfactory ratings were assigned to 6.8% of the observations made. Although token rewards may seem a viable method of reinforcement, teachers in the programs observed would have great difficult amassing enough reinforcing items for the students to exchange for acquired tokens. The teachers observed would benefit from an in-service course on the use of the different methods of reinforcing students.

Section E: Independent Practice

Independent practice time provides students the opportunity to practice acquired skills or information without the teachers' help.

Number 1: Teacher Provides Time for Independent Practice

Table 14.1 shows the number of lessons observed in which time was provided for independent practice and ratings of its use.

Yes: The teacher provided time for independent practice, rating of its use. See Table 14.1, columns 1, 2, 3, and 4. Teachers provided time for independent practice in 18/44 of the lessons observed, 40.9% of the observations made. Teachers 1, 2, and 10 got a rating of 3 in 1/3 of their lessons, while teacher 11 got this rating in 2/3 of the lessons observed. Teachers 1, 2, 3, 5, 8, and 11, got a rating of 4 in 1/3 of the lessons observed, while teachers 6, 7, and 14 got the same rating in 2/3 of their lessons observed. In total, a rating of 3 was received in 5/44 of the lessons observed, 11.4% of the observations made, and a rating of 4 was received in 12/44 of the lessons observed, 27.3% of the observations made. In addition, teacher 13 gave work during independent practice which was irrelevant to the purpose of the lesson.

No. Teachers did not provide time for independent practice. See Table 14.1, column 9. This item identifies lessons observed in which time for independent practice was not provided. Teachers 1, 2, 6, 7, and 14 did not provide independent practice in 1/3 of the lessons observed, teachers 3, 5, 8, 10, and 13 in 2/3 of the lessons observed, teacher 2 in 2/2 and teachers 4, 9, and 15 in 3/3 of the lessons observed. In total, observed teachers did not provide time for independent practice in 26/44 of the lessons observed, 59.1% of the observations.

Item. Other observations or comments. No other observations or comments were made in relation the teachers' provision of time for independence practice.

Summary of provision of time for independent practice. Time for independent practice was provided in 40.9% of the observations made (see columns 2, 3, 4 and 5). Satisfactory ratings were received in 38.7% of the

Table 14.1

Section E: Independent Practice

Number 1: Teacher Provided Time for Independent Practice

Method: Did the teacher provide time for independent practice?

Rating	2* Rarely	3* Sometimes	4* Always	5* Other	9* NO
Teacher					
1		1	1		1
2		1	1		1
3			1		2
4					3
5			1		2
6			2		1
7			2		1
8			1		2
9					3
10		1			2
11		2	1		
12					2
13*				1	2
14			2		1
15					3
Total	0	5	12	1	26
Percent	0	11.4	27.3	2.3	59.1

*Rating
2 Rarely uses method when required
3 Sometimes uses method when required
4 Always uses method when required
9 No time for independent practice not provided

observations made (see columns 3 and 4) while in 2.3% of the observations made (see column 5), activities irrelevant to the purpose of the lesson were used.

Number 2: Teachers' Practices During the Independent Practice Include the Following

This part of the instrument deals with two teaching methods used by the observed teachers during the time provided for independent practice. Table 14.2 indicates the number of lessons observed in which the different practices were used during the time provided for independent practice.

(Method a) Providing students with individual work-sheets. See Table 14.2, column (a), 1, 2, and 3. Teachers 3, 5, 8, and 10 provided students with individual work-sheets in 1/3 of their lessons, while teacher 11 provided work-sheets in 2/3 of the lessons observed. Individual work-sheets would not have been applicable in 36/44 of the lessons observed, 81.8% of the observations made. Only one teacher, 7, did not use individual work-sheets in 1/3 of the lessons observed when they would have been applicable.

(Method b) Assigning students individual projects. See Table 14.2, column (b), 1, 2, and 3. Teachers 1, and 14, used individual projects in 1/3 of the lessons, while teachers 2, 6, 7, 11, and 13 used the same in 2/3 of their lessons. Thus, teachers gave their students' individual projects when necessary in 12/44 of the lessons observed, 27.3% of the observations made. Individual projects would not have been applicable in 32/44 of the lessons observed, 72.8% of the lessons observed.

(c) Other observations or comments. See Table 14.2, column (c), 1, 2, and 3. Other observations and comments on the use of techniques used in independent practice were made in 7/44 of the lessons observed.

Table 14.2
Section E: Independent Practice
Number 2: Techniques Used During Independent Practice

Method	(a) Individual work sheet			(b) Assign projects			(c) Other observations and comments
Rating	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	
Teacher							
1		3		1	2		2
2		3		2	1		
3	1	2			3		1
4		3			3		
5	1	2			3		
6		3		2	1		
7		2	1	2	1		2
8	1	2			3		
9		3			3		
10	1	1			2		1
11	2	1		2	1		
12		2			2		
13		3		2	1		
14		3		1	2		
15		3			3		1
Total	6	36	1	12	31	0	7
Percent	13.6	81.8	2.3	27.3	70.5	0	15.9

*Category

1 O/A	Observed and Appropriate
2 NO/NA	Not Observed and Not Appropriate
3 NO/A	Not Observed but Appropriate

Among other observations was that teachers wrote the work to be done during independent practice time on the chalk board and students wrote their answers on slates or in exercise books. Teachers did not have paper and other materials necessary to make work-sheets for the students due to financial constraints. Thus, chalk boards are used extensively both in the regular classrooms and special classrooms in Tanzania.

Summary of teaching methods used during time provided for independent practice. Teachers did not use individual work-sheets in 2.3% observation when applicable. Individual work-sheets were used in all the lessons observed where they were applicable.

Section F: Classroom Management of Skills

Section F includes data on classroom rules and routines and teachers' reaction to students' inattention and misbehaviour.

Number 1: Classroom Rules and Routines

Table 15.1 shows the number of lessons observed in which students knew the rules and routines of the classroom. In addition, figures indicate whether the students knew the consequences of non-compliance with rules and routines and whether the consequences were appropriate.

(Method a) Teacher has well established classroom rules and routines. See Table 15.1, column (a), 1, 2, and 3. Teachers had well established rules and routines in 36/44 of the lessons observed, 81.8% of the observations made. Teacher 1 did not have well established rules and routines in 1/3 of the lessons observed, teachers 7 and 8, in 2/3 of their lessons while teachers teacher 9 did not in all 3/3 of the lessons observed. In total, teachers did not have well established rules and routines in 8/44 of the lessons observed, 18.2% of the observations made.

(Method b) Consequences of non-compliance are well known by the students. See Table 15.1, column (b), 1, 2, 3. Students knew the consequences of non-compliance with the rules and routines in 36/44 of the lessons observed, 86.8% of the observations made. These are all the lessons observed in which students knew classroom rules and routines (as identified in method a).

(Method c) Consequences of non-compliance with rules and routines are appropriate. See Table 15.1, column (c), 1, 2, and 3. A fourth category has been added in the discussion of this item because there were some consequences observed which were inappropriate. Teachers 7, 8, and 11 had appropriate consequences in 1/3 of the lessons observed, teachers 1 and 9 in 2/3 of the lessons observed and teachers 2, 3, 4, 5, and 11 in all 3/3 of the lessons observed. In total, teachers had appropriate consequences for non-compliance with rules in 22/44 of the lessons observed, 50% of the observations made. Teachers 6, 7, 9, and 15 did not have consequences for non-compliance with rules and routines in 1/3 of the lessons observed and teacher 8 in 2/3 of the lessons observed. The following teachers had inappropriate consequences for non-compliance with rules and routines: teachers 7, 9, and 10 in 1/3 of the lessons observed; teacher 12 in 2/2 of the lessons observed; teacher 15 in 2/3 of the lessons observed; and teachers 13 and 14 in 3/3 of the lessons observed. In summary, the teachers had inappropriate consequences in a total of 13/44 of the lessons observed, 27.3% of the observations made. An example of inappropriate consequences for non compliance with rules and routines is corporal punishment used by teachers 12, 13 and 14. The rationale for this and other forms of punishment used by these teachers is that the same consequences were used for non-compliance with rules and routines as in the students' homes.

Table 15.1
Section F: Classroom Management Skills
Number 1: Classroom Rules and Routines

Method	(a) Well established rules and routines			(b) Students know consequences of non-compliance			(c) Consequences are appropriate			
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A	4 NA
Teacher										
1	2		1	2		1	2	1		
2	3			3			3			
3	3			3			3			
4	3			3			3			
5	3			3			3			
6	3			3			2		1	
7	1		2	1		2	1		2	
8	1		2	1		2	1		2	
9			3			3		1	1	1
10	3			3			1			1
11	3			3			3			
12	2			2						2
13	3			3						3
14	3			3						3
15	3			3					1	2
Total	36	0	8	36	0	8	22	2	7	12
Percent	81.8	0	18.2	81.8	0	18.18	50	4.6	15.9	27.3

* Category	
1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable
4 NA	Not Appropriate

(d) Other observations and comments. No other comments and observations were made. It was difficult to evaluate the consequences of non-compliance with rules and routines used because there was no observation of rules and routines being violated in most lessons observed. Therefore, the researcher had to rely on what the teachers told her rather than on observation data.

Summary of students' knowledge of classroom rules and routines. Students did not know the rules and routines of the classroom and the consequences for non-compliance with rules and routines in 18.2% of the observations made. Of those who had consequences for non-compliance with classroom rules and routines, the consequences were inappropriate in 27.3% of the observations made.

Number 2: Teachers' Reaction to Inattention and Misbehaviour

Table 15.2 (a & b) indicates methods used by teachers in controlling students' inattention and misbehaviour in the classroom.

(Method a) Ignores brief, non-disruptive misbehaviour. See Table 15.2 (a), column (a), 1, 2, and 3. For example, teacher 11, in a writing lesson, ignored students' noise during independent practice as it was not affecting their work. Teachers 1, 8, and 10, ignored misbehaviour in 3/3 of their lessons, teachers 4, 5, 7, 9, and 12, used this method in 2/3 of their lessons, while teachers 3, 6, and 15 used it in only 1/3 of their lessons. Teachers 2, 13, and 14, did not use it in any of their lessons. In total, the teachers ignored brief non-disruptive behaviour in 25/44 of the lessons observed, 56.8% of the observations made. Teachers did not use such a teaching method because it was not necessary in 19/44 of the lessons observed, 43.18% of the observations made.

(Method b) Teacher stops minor, but extended misbehaviour non-disruptively, e.g, uses nonverbal cues such as eye contact, gestures, touch or moves close to misbehaving student to stop student's misbehaviour. See Table 15.2 (a), column (b), 1, 2, and 3. For example, in the writing lesson discussed above (method a) teacher 11 moved close to a student continuously murmuring. Teachers 5, 6, 7, and 12 stopped minor but extended behaviour in 1/3 of their lessons observed, while teachers 9, 10, 11, and 13 used this method in 2/3 of the lessons observed. Teachers did not use this method in 27/44 of the lessons observed as it was not applicable. Teachers 8, 9, and 11 did not use this method in 1/3 of their lessons observed when applicable while teacher 7 did not use it in 2/3 of the lessons observed. Thus, teachers stopped minor but extended misbehaviour in 12/44 of the lessons observed, 27.3% of the observations made. In summary, teachers did not use this method when applicable in 5/44 of the lessons observed, 11.36% of the observations made.

(Method c) Teacher stops disruptive behaviour quickly , e.g., calls student's name, or calls for attention or work but does not over-dwell on misbehaviour. See Table 15.2 (a), column (c), 1, 2, and 3. For example, teacher 10 sent a student who was disrupting the lesson out as calling the student's name was not effective in stopping the student's disruptive behaviour. Teachers 1, 2, 3, 8, and 14 stopped disruptive behaviour immediately in 1/3 of their lessons, teachers 5, 6, 7, 9, and 13 did the same in 2/3 of the lessons observed while teachers 11 and 12 did it in 3/3 of the lessons observed. Teachers 7, 8, and 9 did not stop misbehaviour immediately in 1/3 of their lessons. This teaching behaviour was not applicable in 20/44 of the lessons observed, 45.5% of the observations made.

Table 15.2(a)
Section F: Classroom Management Skills
Number 2: Teachers Reaction to Inattention and Misbehaviour

Method	(a) Ignores brief non-disruptive behaviour			(b) Stops minor but extended misbehaviour			(c) Stops disruptive behaviour quickly		
Category	1* O/A	2* NO/NA	3* NO/A	1 O/A	2 NO/NA	3 NO/A	1 O/A	2 NO/NA	3 NO/A
Teacher									
1	3				3		1	2	
2		3			3		1	2	
3	1	2			3		1	2	
4	2	1			3			3	
5	2	1		1	2		2	1	
6	1	2		1	2		2	1	
7	2	1		1		2	2		1
8	3				2	1	1	1	1
9	2	1		2		1	2		1
10	3			2	1		3		
11	3			2		1	3		
12	2			1	1			2	
13		3		2	1		2	1	
14		3			3		1	2	
15	1	2			3			3	
Total	25	19	0	12	27	5	21	20	3
Percent	56.8	43.2	0	27.3	61.4	11.4	47.7	45.5	6.8

* Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Thus, this teaching behaviour was observed in 21/44 of the lessons observed, 47.7% observation. This teaching method was not used when applicable in 3/44 of the lessons observed, 6.8% of the observations made.

(Method d) Teacher praises someone else's good behaviour when other students are engaged in an inappropriate behaviour. See Table 15.2 (b), column (d), 1, 2, and 3. Teacher 13 praised students who were sitting up correctly on their chairs when some of the students in the class were not sitting as required. As a result of this praise, other students sat correctly on their chairs and paid more attention. Teachers 1, 7, 10, and 13 praised someone else's good behaviour in 1/3 of their lessons observed while teacher 5 praised other students' behaviour in 2/3 of the lessons observed. Thus, this method was used in a total of 8/44 of the lessons observed, 18.2% of the observations made. This method was not applicable in 20/44 of the lessons observed, 45.5% of the observations made. Teachers 1, 7, 8, 9, 10, and 13 did not use this method when it would have been applicable in 2/3 of their lessons observed, while teachers 11, and 14 did not use it in 1/3 of their lessons. Teacher 12 did not do it when applicable in 1/2 of the lessons observed, Thus, this method was not used when applicable in a total of 15/44 of the lessons observed, 34.1% of the observations made.

(e) Other. See Table 15.2 (b), column (e), 1, 2, and 3. Other methods of controlling student misbehaviour and inattention observed are discussed in this item. Teachers 1, 2, and 3 had other observations and comment made about them in 3/3 of their lessons; teachers 4, and 5, had other comments in 2/3 of their lessons; while teachers 6, and 15, had comments in 1/3 of their lessons. In these classrooms there were helpers who handled any case of inattention and misbehaviour among the students.

Table 15.2(b)
Section F: Classroom Management Skills
Number 2: Teachers Reaction to Inattention and Misbehaviour

Method	(d) Praises someone else for good behaviour			(e) Other
Category	1* O/A	2* NO/NA	3* NO/A	
Teacher				
1	1		2	3
2		3		3
3		3		3
4		3		2
5	2			2
6		3		1
7	1		2	
8		1	2	
9		1	2	
10	1		2	
11	2		1	
12		1	1	
13	1		2	
14		2	1	
15		3		1
Total	8	20	15	15
Percent	18.2	45.5	34.1	34.1

*Category

1 O/A	Observed and Applicable
2 NO/NA	Not Observed and Not Applicable
3 NO/A	Not Observed but Applicable

Note: Figures on this table indicate the number of lessons in which the instructional technique was observed.

Thus, teachers handled very few cases of inattention or misbehaviour.

Summary of teachers' reaction to inattention and misbehaviour. As a group, the teachers did not stop minor but extended misbehaviour in 11.4% of the observations made and did not stop disruptive behaviour quickly in 6.8% of the observations made. In addition, teachers failed to praise someone else's appropriate behaviour when applicable in 34.1% of the observations made. As individuals, teachers 7, 8, and 9, did not stop minor but extended misbehaviour, disruptive behaviour quickly or praise someone else's appropriate behaviour in at least one of their lessons. Teacher 11 did not stop minor but extended misbehaviour or praise someone else's appropriate behaviour in 1/3 of the lessons observed. Teachers 2, 10, 12, 13, and 14 did not praise someone else's appropriate behaviour in at least one of their lessons. Use of praise to control inattention and misbehaviour should be included in an in-service course for the observed teachers as most of them did not use this method when necessary. Teachers 2, 10, 12, 13, and 14, did not praise someone else's appropriate behaviour in at least one of their lessons. Use of praise to control inattention and misbehaviour should be included in an in-service course for the observed teachers as most of them did not use this method when necessary.

Summary of the Classroom Observations

Table 16 (a-g) summarize the findings from the classroom observations. These tables show the need for in-service and prescriptive feedback to the teachers observed. In-service and prescriptive feedback needs identified in this section are discussed in detail in the next chapter.

Inter-Observer Reliability

The reliability of the observation instrument was assessed through calculation of percent agreement between two observers. A research assistant, a member of the Faculty of Education at the University of Dar es Salaam, was involved in the third observation session of nine of the teachers in the sample. All the lessons used for inter-observer reliability were by teachers from programs in the Dar es Salaam area. The programs in other regions were not included in the lessons for inter-observer reliability assessment due to financial constraints. The research assistant was given one of the observation instruments to study. The researcher met with the research assistant and discussed any items in the instrument that were identified as needing clarification. The rationale for not providing direct training to the second observer was to simulate actual conditions under which the instrument would likely be used in the future when an untrained observer may use the scale for observing and rating teacher performance. This test of reliability provided a more stringent test than would have been obtained if a trained and experienced observer had been used. This method of assessing the reliability of the instrument may indicate the need for using trained and experienced observers and for making modification of the instrument. The two observers used the observation instrument to record their observations during the lessons observed. Audio-tapes of the lessons observed were also available to the observers when completing the observation instruments.

The data were analyzed by computing the average percent agreement between recorded observations in all the teaching methods. Tables 17 (a-b) show percent agreement between the two observers in groups of related instructional methods. A list of inter-observer percent

Table 16(a)

In-service and Prescriptive Feedback Needs

Section*	Teaching Method	In-service*	Prescriptive feedback*
A	Lesson Introduction		
#1	Motivating and gaining students attention:		
	(a) Predicts enjoyment	X	
	(b) Mentions information to be learned	X	
	(c) Promises external rewards	X	
	(d) Reminds about later requirements	X	
	(e) Uses media	X	
#2	Review of related material through:		
	(a) Questions		
	(b) Quizzes		
	(c) Summary		
#3	Pre-teaching parts of information to be learned	X	
#4	Statement of purpose of the lesson:	X	
	(a) Teacher shares with students the purpose of the lesson		
	(b) Teacher specifies objectives		

The "Section" column corresponds with the numbering in the observation instrument (Appendix A).

An "X" on the in-service column indicates need for in-service training for all teachers.

A number in the prescriptive feedback column indicates the specific teacher(s) requiring feedback on the particular teaching method indicated.

Table 16(b)
In-service and Prescriptive Feedback Needs

Section	Teaching Method	In-service	Prescriptive feedback
B	Presentation of new materials		
#1	Delivery of new information or skills:		
(a)	Demonstration in front of the group		
(b)	Lecture		
(c)	Prepared hand-outs		
(d)	Media (filmstrips, slides, tape, record, etc.)	X	
(e)	Questioning students to check understanding		
(f)	Inviting and responding to student's questions		
(g)	Focused discussion		
(h)	Students take turns reading or reciting		
(i)	Drill (flash cards, math tables, chorus questions)		
(j)	Practical exercise or experiment		
(k)	Seat-work or homework assignment		
(l)	Game, contest		
#2	Clarity of presentation of material:		
(a)	Teacher repeats or reteaches information if necessary.		
(b)	Using built-in review		

Table 16(c)
In-service and Prescriptive Feedback Needs

Section	Teaching Method	In-service	Prescriptive feedback
(c)	Explaining of unfamiliar words and concepts		
(d)	Monitoring student understanding		
(e)	Vocabulary at the students' level of comprehension		
(f)	Avoiding the use of distracters	X	
(g)	Appropriate rate of speech		
(h)	Using good enunciation		
(i)	Checking understanding before moving to the next part of the lesson		
(j)	Drawing attention to difficult points		
(k)	Presenting information in small steps		
#3	Maintaining attention:		
(a)	Asking questions of any students whether they volunteer or not		7
(b)	Using a variety of media		7
(c)	Frequently changes instructional methods	X	
#4	Levels of Bloom's taxonomy at which the information or skill presented:		
(a)	Knowledge		
(b)	Comprehension	X	

Table 16(d)
In-service and Prescriptive Feedback Needs

Section	Teaching Method	In-service	Prescriptive feedback
(c)	Application and higher levels	X	
#5	Sequencing of content of instruction:		
(a)	Materials at the lower level of Bloom's taxonomy presented before the material at the higher level		
(b)	Moving from concrete to abstract		8
(c)	Moving from content of previous instruction to new content		8
(d)	Relating student's personal experiences to new content		8
(e)	Moving from oral to written		
(f)	Ending by summarizing main points in the lesson	X	
C	Monitoring student understanding		
#1	Techniques of monitoring student understanding		
(a)	Asking questions to monitor student's understanding		
(b)	Asking questions at the different levels of Bloom's taxonomy		
	(i) knowledge		
	(ii) comprehension		
	(iii) application and higher levels		

Table 16(e)
In-service and Prescriptive Feedback Needs

Section	Teaching Method	In-service	Pres-criptive feedback
(c)	Distributing questions among all students (volunteers and non-volunteers)		
#2	Use of questioning techniques:		
(a)	Asks one question at a time		
(b)	Correcting student errors consistently and immediately		
(c)	Praising frequently and giving positive feedback when student responses are correct		6,7,8
(d)	Stating questions as clearly and concisely as possible		
(e)	Using age-appropriate language when questioning		
(f)	Attending to the responding student		
#3	Handling incorrect answers:		
(a)	Rephrasing question	X	
(b)	Asking similar but simpler question	X	
(c)	Other	X	
#4	Handling students who do not respond to questions:		
(a)	Using verbal cues		
(b)	Using gestural cues		
(c)	Using physical cues		
(d)	Providing the answer and moving to another question		

Table 16(f)
In-service and Prescriptive Feedback Needs

Section	Teaching Method	In-service	Prescriptive feedback
(e)	Asking another student to answer the question		
D	Guided practice		
#1	Providing guided practice:		
a)	Providing time for guided practice in the lesson		
#2	Teacher practices during guided practice:		
(a)	Using prompts to elicit appropriate behaviour		13
(b)	Fading prompts used until no prompts are necessary for performance of skill	X	
(c)	Providing frequent practice		13
(d)	Asking questions of all students		13
(e)	Using choral group responses		
#3	Using reinforcement		
(a)	Descriptive praise	X	
(b)	Social praise	X	
(c)	Social privileges	X	
(d	Food rewards	X	
(e)	Token rewards	X	
E	Independent practise		
#1	Provision of time for independent practice:		

Table 16(g)
In-service and Prescriptive Feedback Needs

Section	Teaching Method	In-service	Prescriptive feedback
#2	Teacher's practices during independent practice:		
	(a) Use of work sheets		
	(b) Assigning students individual projects		
F	Classroom Management skills		
#1	Classroom rules and routines		
	(a) The teacher has well established classroom rules and routines		
	(b) The consequences for non-compliance are well known by the students	X	
	(c) Consequences for non-compliance to classroom rules and routines are appropriate	X	
#2	Teachers' reaction to inattention and misbehaviour:		
	(a) Ignoring brief, non-disruptive misbehaviour		
	(b) Teacher stops extended but non-disruptive behaviour quickly		
	(c) Stopping disruptive behaviour quickly		
	(d) Teacher praises someone else's appropriate behaviour	X	

agreement on all the methods in the observation instrument is included in appendix C. The summary of inter-observer reliability (Table 17) is discussed below.

The average percent agreement between the two observers varied widely between the groups of instructional methods. For example, "pre-teaching of skills to be taught later" and "reinforcement during guided practice" had the lowest inter-observer reliability of 55.6%, while the two observers had 100% agreement on "provision of independent practice" and "classroom rules and routines."

The two observers had 57.1% agreement in their observations on teachers' performance in the groups of methods dealing with "teachers reaction to inattention and misbehaviour." The two observers had average percent agreements in the 60's and 70's in most of the groups of methods involved in the observations (see Table 17). In the rest of the groups of methods in the observation instrument the observers had average percent agreements of 80 and above (see Table 17).

The percent of inter-observer agreement within each group of related methods also varied widely with very low percent agreement in one or two of the methods. This variation caused the low average percentage agreement for the groups of methods. For example, in the methods of "gaining students' attention and motivating students (Section A, #1)," method (a) "making statements that the students will enjoy the lesson," the two observers had 33.3% agreement, while in method (d) "reminding students of later requirements" the observers had 100% agreement.

The lack of agreement as to whether methods of instruction not observed would have been appropriate for the lesson or not was a major factor in causing the low percent agreement. For example, in Section D #2 method (e), "use of token reinforcement", both observers agreed

Table 17
Percent of Agreement Between Two Observers

Section*	Teaching Method	Percent Agreement
A	Lesson Introduction phase	
	#1 Gaining attention and motivation	66.7%
	#2 Review of related material	68.7%
	#3 Pre-teaching	55.6%
	#4 Statement of purpose of lesson	86.1%
B	Presentation of new Material	
	#1 Delivery of new information	55.6%
	#2 Clarity of presentation of material	77.8%
	#3 Maintaining attention	48.2%
	#4 Levels of Blooms' Taxonomy at which material is presented	85.2%
	#5 Sequencing content of instruction	79.6%
C	Monitoring Students' understanding	
	#1 Techniques for monitoring understanding	80%
	#2 Questioning techniques	92.6%
	#3 Handling incorrect answers	94.4%
	#4 Handling students who do not respond	70.5%
D	Guided practice	
	#1 Provision of guided practice	66.7%
	#2 Practices during guided practice	75.6%
	#3 Reinforcement during guided practice	55.6%
E	Independent practice	
	#1 Provision of independent practice	100%
	#2 Teachers practices during independent practice	77.8%
F	Classroom management skills	
	#1 Classroom rules and routines	100%
	#2 Teachers' reaction to inattention and misbehaviour	57.1%

* The sections on this table correspond to the sections in the observation instrument.

that none of the teachers observed used token reinforcement in any of their lessons. However, the two observers disagreed on whether token economies would have been applicable in four of the nine lessons they both observed. Thus, causing a low inter-observer agreement for this method.

In summing up, the inter-observer percent agreement is unacceptably low indicating the need for observer training if the instrument is to be used in a satisfactory manner. Other factors affecting percent agreement will be discussed in detail in the Discussion chapter. In addition, suggestions for modification of items in the observation instrument with low percent agreement are discussed.

Time used to record and interpret information on the observation instrument. Recording of observation information on the observation instrument took the researcher an average of one hour and fourteen minutes. The time used to interpret the data on the observation instrument was about an hour. This time requirement may be too long for regular school inspectors to spend on a single evaluation.

CHAPTER V

DISCUSSION

Results of this study indicate that special education experts and teachers think that the same methods of effective instruction are in general suitable for children with mental retardation in both Tanzania and North America. However, the teachers and experts did suggest that a few changes should be made to the western derived instructional observation instrument. The results of the teacher observations indicate that the teachers used methods of effective instruction in most of the lessons where they were applicable. There were, however, a few areas in which the teachers used only one method when a variety of methods may have been advantageous. These were the areas in which all the observed teachers could benefit from in-service training or in which individual teachers could benefit from prescriptive feedback. The results of the study are discussed in more details below. The discussion is guided by the research questions asked in the study.

Question 1: Specialists Review of the Observation Instrument

> Do special education specialists in Tanzania think that the same methods of effective instruction are suitable for both Tanzania and North America?

In general, special education specialists in Tanzania thought that the same methods of effective instruction were suitable for both Tanzania and North America. All five of the experts felt that the observation instrument which was developed on the basis of effective instructional methods identified in North American literature was, in general, suitable for Tanzania. Four of the five reviewers suggested only structural changes rather than changes in the content of the observation instrument. However, the fifth reviewer felt that some changes in the content were necessary. The suggested changes are discussed below.

Question 2: Specialists Recommendations for Additions, Subtractions, and Modifications to the Observation Instrument

> Alternatively, do the specialists recommend addition, subtraction, or modification of the observation checklist items to adapt the Western-based observation checklist to the Tanzanian context?

Recommended additions. Only one reviewer recommended additions to the observation instrument. This reviewer recommended addition of items to survey the teachers' use of different methods to encourage students to answer questions and to participate in classroom discussions. In many homes in Tanzania, children are taught that it is impolite to talk in front of adults. Thus, similar to the Kokwet children of Kenya, many Tanzanian children learn early to maintain silence while in the presence of adults (Harkness & Super, 1982). Harkness and Super also found that there was little communication between mothers and their children and that the little communication that did occur was mostly in the form of commands issued by mothers. According to the author, communication between children and adults became more negative and decreased with age. Therefore, it is imperative for teachers to encourage students to participate verbally in classroom discussion. In addition, there is general agreement that speech development is the most retarded area in their development (Evans & Hampton, 1968; Winzer, 1990). The type of environment in which a child with mental retardation lives significantly affects his or her language development. Bishop & Mogford (1988) contended that there is a "minimal level of verbal input necessary if the child is to learn language". This conclusion was reached after a study of cases of children with severe verbal input deficiency. Bishop and Mogford also reported that there was a remarkable recovery in language ability of children who had severely deficient verbal input when they were placed in more normal language environment. It is the researcher's view that several items in the observation instrument give a general idea of how well the teachers encouraged verbal participation in their classrooms. For example, methods in Section C deal with how teachers monitor students' understanding. These items include assessment of teachers' questioning techniques and also evaluate how teachers handle students who do not respond to questions. In addition, Section B, Number 3, Method a, gives an indication of the teachers' attempts to involve all students in answering questions. Other items which rate this concept were those evaluating the distribution of questions among all students. Teachers, by distributing questions among all students, give all students the opportunity to participate verbally and thus, foster students' language and speech development.

Subtraction of Items. The item on media (Section B, Number 1, Method d) was seen by one reviewer as inappropriate. This reviewer recommended that the method should be removed from the observation instrument as most schools did not have access to media. The researcher found that some of the special schools observed had radio-cassette recorders which were not used in any of the lessons observed. Since special schools receive support from voluntary organizations from inside and outside Tanzania, they can acquire the necessary media more easily than can regular schools. The researcher is of the opinion that teachers should be trained in the use of media equipment when it is available rather than deleting the method from the instrument. This training would be especially useful in training teachers in the use of radios and audio-cassette recorders in their lessons, since such equipment is more readily available than film projectors, slide projectors, televisions and videos. The researcher found that students were extremely motivated by the audio-cassette recorder she used. For example, in one lesson, one of the students paid more attention to the teacher and worked very well when he was promised he could listen to some music on the cassette recorder if he paid attention to the lessons. In another classroom students were thrilled to hear their own voices recorded earlier as they answered questions during three lesson. In view of these and other observations, the researcher believes that media would be very useful in instruction and especially in enhancing language and speech development of the students in some of the programs observed.

One reviewer also suggested that audio-taping should not be included in the observation procedure as most of the special schools do not have cassette-recorders. The researcher believes that audio-taping is essential until the observer has become well acquainted with the instrument and its use. The researcher also found it difficult to take anecdotal records and complete the observation instrument during the period of the lessons. This difficulty arose because the observation instrument is long and some of the lessons were as short as ten minutes. For example, two lessons by teacher 8 and one lesson by teacher 12 were about 10 minutes. Furthermore, the schools do not have to own audio-cassette recorders used in the observations as the outside observers can carry audio-cassette recorders to all the programs they have to observe. The researcher found it easy to carry a small cassette-recorder to all the programs observed.

Suggested modifications. Four of the reviewers assessed the language used in the instrument as suitable. They felt that the language would not present problems to any special education experts who might be asked to use this observation instrument. However, one reviewer suggested that the instrument should be translated into Kiswahili if it was to be used widely in Tanzania. The researcher agrees with this reviewer on the importance of translating the instrument into Kiswahili since most Tanzanians may be more comfortable with the use of materials which are in Kiswahili rather than in English. Translation of this instrument should therefore be considered.

Question 3: Special Education Teachers' Review of the Observation Instrument

> Do teachers of students with mental retardation in special education classrooms in Tanzania think that the same methods of effective instruction are suitable for both Tanzania and North America?

Four of the five special education teachers surveyed felt that the observation instrument was, in general, applicable to the Tanzanian context. However, a few changes were suggested to improve the observation instrument. One of the teachers felt that the observation instrument was not suitable for the evaluation of the teachers currently teaching in programs for students having mental retardation in Tanzania as most of the teachers had not had special training. This reviewer made several suggestions for improvement of the observation instrument. These changes are discussed below.

Question 4: Teachers' Recommendations on Additions, Subtractions and Modifications of the Observation Instrument

> Alternatively, do the specialists recommend addition, subtraction, or modification of the observation instrument items to adapt the Western-based observation instrument to the Tanzanian context?

Several additions, subtraction, and modifications of the instrument were suggested by the teachers. In making the decision on whether any of the suggested addition, subtractions and modifications of the observation instrument were appropriate, the following criteria were used. In view of the current philosophy of special education which emphasises normalization (Winzer, 1990), the appropriateness of methods in the observation instrument was evaluated as to their ability to foster students' ability to cope with the demands of mainstreamed home and school environment. Thus, the content of instruction and the methods of instruction which are used for students with mental retardation should foster skills essential in helping students adjust to mainstreamed settings. In addition, any activities and methods leading to the acquisition of the educational goals for students with mental retardation should be retained. Winzer (1990) identified the educational goals for students with mental retardation as "productivity, independence, and participation." Yssyldyke and Algozzine (1984) also identify financial independence as one of the goals of education today. If the goals of normalization are to be met, students with mental retardation should also be helped to achieve some financial independence, to the extent possible. The suggested additions, subtractions and modification of the observation instrument are discussed below.

Suggested additions. There were suggestions that items or a section evaluating the teachers' use of short-stories, riddles and proverbs should be added to the observation instrument. Short-stories, riddles, and proverbs were frequently used in the community and in educational programs for students with mental retardation in Tanzania. The prevalence of use of short-stories, riddles and proverbs in Tanzanian communities and in programs for students with mental retardation led to the suggestion that items evaluating the use of these content areas should be included in the observation instrument. Many of the observed lessons, especially communication lessons, included short-stories, riddles or proverbs. Addition of items evaluating the cultural appropriateness of the content of instruction was also recommended. Evaluating of the cultural appropriateness of the content of instruction involves assessing whether the content of instruction is relevant to the community life which the students lead. For example, teaching students to cook using electric and gas cookers when they use charcoal burners at home would not be culturally appropriate. Another example was teaching students who are severely handicapped to eat using spoons when at home they are expected to eat using their hands.

Addition to the observation instrument of items that evaluate whether instruction is conducted in the situation in which it naturally occurs was also suggested. This suggestion arose from the fact that students with mental retardation have problems transferring learning from one environment to another. Consequently, it is preferable that students be taught in the situation where the skills are required in normal circumstances or situations closely approximating normal circumstances. Thus, teaching skills in circumstances approximating where they are required to perform the skills eliminates the need for the teachers to spend time ensuring transfer of skills to the situation. An example of teaching in the situation in which skills are normally required is that of teaching eating skills during meal times. It is the researcher's view that adding specific items which evaluate the use of (a) riddles, short-stories and proverbs, and (b) appropriateness of the content of the instruction would be dealing with the content rather than the process of instruction and would be outside the limits of this study. The purpose of this study was exploration of the instructional methods used by the teachers of students with mental retardation. Hence, evaluation of the content of instruction, although recognized as important in instruction, was not included in the study. However, the teachers' use of effective instructional methods in presenting short-stories, riddles, and proverbs was assessed when they were included in lessons observed. Furthermore, the appropriateness of the methods of instruction used for the situation was evaluated in all the lessons observed. In addition, instructional settings in which the lessons were conducted were recorded in the anecdotal records, Part I of the observation instrument. For example, in two special education units and in one of the special day school, one day of the school week was reserved for homebound instruction. Homebound instruction was intended to help the students transfer skills learned at school to the home situation. Furthermore, the teachers used the opportunity to instruct parents to teach their children skills which were essential for the children's independence and self-reliance in the home environment.

Suggested subtractions. There were suggestions from the teachers that items on assigning students homework and the use of the lecture method should be subtracted from the observation instrument. The researcher is of the opinion that the lecture method of presentation of information should not be left out of the observation instrument. The reason for retaining the lecture method is that if students with handicaps are to be integrated with their non-handicapped counterparts they need to be able to learn through the same methods. However, teachers need to make temporary instructional modifications to ensure that their students learn the essential information/skills.

Teachers also suggested that homework should also be left out of the observation instrument. The researcher believes that homework should be retained because of its normative and educative functions. Homework is important as it may work as a method fostering communication between the parents and the teachers. Homework may also help parents become aware of their children's abilities and may also work as a starting point in parent-child communication. With the present aim of special services for the handicapped advocating integration in all areas (The republic of Tanzania, 1984), students in programs for students with mental retardation should be familiarized with instructional methods used in regular school programs. In addition, students with mental retardation may feel isolated if they do not have homework to work on when their siblings are working on their's.

The teachers were in agreement with the experts that audio-taping should be left out of the observation instrument. As noted earlier the researcher believes that audio-taping is important because of the length and complexity of the observation instrument and the length of the lessons observed. Taped lessons may also be useful in helping teachers during in-service training and when providing prescriptive feedback to the teachers. In addition, audio-taping may help observers become more objective in their evaluation as they will not have to rely solely on their memory but can refer to the tape in case of uncertainty.

One of the teachers felt that the use of "prepared hand-outs" should be left out of the observation instrument. The teacher was of the opinion that someone else other than the teacher would be needed to prepare the hand-outs. In the researcher's opinion, someone to prepare teaching aids is not necessary, teachers can use the materials available to them to make hand-outs which are relevant to their instructional purposes. Teachers may need training in the preparation of hand-outs and other teaching aids to enable them to produce aids which will make their instruction more effective.

Suggested modifications. There was a suggestion that the item on use of quizzes should be altered to read oral rather than written questions or quizzes. The researcher believes that the way this item currently appears can be used to represent both oral and written quizzes. It is essential to leave this item as it is because some of the students in the observed programs have the ability to cope with simple written quizzes. However, some clarification may be added to reduce any misunderstanding of the item on quizzes. For example, the following phrase may be added to the item to clarify it: "either written or oral quizzes as applicable."

As indicated earlier, one of the teachers suggested that inattention and misbehaviour should be treated very negatively. The teacher made this comment in view of the methods of discipline commonly used in the schools and home. Unfortunately, no documentation of methods used to control inattention and misbehaviour in Tanzanian schools and homes was available to the researcher. However, the following list of consequences of non-compliance with rules and routines at home and in school was compiled from the researcher's experience in Tanzania and from verbal information obtained from Tanzanian educators at the University of Alberta at the time of writing the thesis.

The usual methods of discipline used in homes in Tanzania included (a) spanking, (b) scolding, (c) loss of privileges such as being kept away from games or playing with friends, (d) isolation from peers, and (e) depriving children of meals (used by a very small percentage of parents). In addition to using all the consequences for misbehaviour used at home, teachers also use the following methods of discipline in schools in Tanzania, (a) having students perform strenuous exercises such as running, and push-ups; (b) providing students with physical activities such as sweeping the school compound, digging holes and gardening; and (c) being forced to stay in uncomfortable positions for extended lengths of time, for example, standing with hands lifted up or kneeling for a long time.

Among these disciplinary methods the most commonly used in both home and school situations is scolding and spanking. Scolding is commonly used for infractions of minor rules, while caning is used for infractions of major rules. The type of punishment used also depends on the age of the child. Caning of young children is more frequent than is caning of older children. Older children are expected to be able to understand and heed reprimands better than young children can. Thus, scolding is used more often with the older children than it is with young children. Other forms of physical punishment are used more frequently with older children than with young ones. In contrast to the negative methods discussed above, teachers and parents at times praise other students for appropriate behaviour in attempting to model and elicit such behaviour from other students.

Not all of the ethnic groups in Tanzania use the disciplinary methods discussed above. Some of the ethnic groups, especially the coastal peoples of Tanzania, tend to be more liberal and do not use the authoritarian model used by most ethnic groups in Tanzania. However, the types of punishment used in schools tend to be similar in all schools.

Due to the widespread use of corporal punishment in controlling behaviour in educational programs, the researcher looked at some of the disadvantages of using such methods. Literature on the use of negative methods of controlling behaviour especially the use of corporal punishment is discussed below.

Literature on the use of corporal punishment indicate that corporal punishment does not correct discipline problems but may cause more problems than it solves. Hartzell (1975) contended that corporal punishment did not deter future misbehaviour as was intended. The lack of deterrent effect may occur because corporal punishment does not attack the root of the problem. Hartzell (1975) also asserted that corporal punishment may inadvertently push a child towards commitment to a deviant lifestyle. Therefore, literature overwhelmingly supports the abolition of corporal punishment (Cryan, 1987; Hartzell, 1975; Henson, 1985; Maurer, 1981; Ministry of Education Ontario, 1981; National Education Association, 1972). The rationale which has led to the persistent use of corporal punishment has been discredited. Henson's (1986) discussion of the ten myths about corporal punishments provides a good summary of the reasons often given by those in favour of corporal punishment and identifies the falsity of each of these myths. These ten myths are discussed below.

1. "Corporal punishment is time efficient." This is

not true as teachers who use corporal punishment spend more time controlling their classes than do teachers who seek the root of the problem and use other discipline methods. Since corporal punishment does not have long term impact (Ministry of Education, Ontario, 1981), teachers have to keep punishing students over and over for violation of rules and routines (National Education Association, 1972).

2. "The effect of corporal punishment increases with its use." The effect of corporal punishment actually diminishes with time forcing a teacher to use more force each time. Students do not react well to such force.

3. "Corporal punishment attacks the problem head on." This is not true as corporal punishment attacks the student causing physical and psychological pain (Cryan, 1987).

4. "All students dislike corporal punishment." Some students seek corporal punishment to make teachers feel guilty. In fact, corporal punishment is a deterrent of misbehaviour in only a small number of students (Ministry of Education, Ontario, 1981).

5. "Professional teachers only use corporal punishment for the benefit of their students." Most teachers use corporal punishment to further personal gains. For example teachers are more apt to use corporal punishment when they are under pressure.

6. "Corporal punishment is a way of punishing only those students who misbehave." Punishing one student communicates the message to the whole class that they can also get similar punishment. This may frighten or intimidate some students making them less apt to participate in class activities. Thus, the psychological effect of corporal punishment extends to the whole class. Thus, corporal punishment is detrimental to learning (National Education Association, 1972).

7. "Corporal punishment prepares students to live in a society that punishes those who break rules." Instead of leading students to conform to the rules of society, corporal punishment teaches students that might is right and does not lead students to want to behave in positive ways. Cryan (1987) found there was a relationship between physical punishment in early years and the extent of involvement in delinquency, violent crimes, and lawlessness in drivers.

8. "Corporal punishment deters aggression." When children are faced with aggression they try to escape it. However, if such children can find no way to escape the aggression they resort to aggressive behaviour (Maurer, 1981). Children's aggression may be directed to other children or to destruction of property. Teachers in using corporal punishment reinforce use of violence which in many cases has been started in the children's homes through the use of corporal punishment (Ministry of Education, Ontario, 1981). In summary "aggression begets aggression" (Wesley, 1979).

9. "Some students only understand this type of communication." In assuming this position teachers prevent students from learning other ways of solving their problems. Teachers should help students learn to solve their problems through self-control and reasoning.

10. "Teachers have a right to do whatever they must to maintain discipline in the classroom." If teachers must use corporal punishment they should use it as (a) a last resort, (b) have a colleague present, (c) forewarn the students that consequences of non-compliance with the specific rule or routine will be corporal punishment, and (d) have a written account of events leading to use of corporal punishment (Henson, 1985. pp.107-109).

In addition to these arguments against the use of corporal punishment, corporal punishment may cause adverse medical and psychological consequences (Cryan, 1987). Thus, although use of physical punishment may appear to be beneficial in some situations, it has many negative effects. Alternative methods of controlling students' behaviour have been recommended (National Education Association, 1972; Hartzell, 1975). For example, Hartzell (1975) recommended the following alternatives to physical punishment: (a) setting limits and firmly and constantly reinforcing them through non-coercive sanctions, while (b) providing the students with opportunity for success, recognizing and rewarding positive behaviour and aiding students to develop academic and social competencies.

The literature discussed above on the effect of punishment is from North America. Similar studies on the effect of using punishment should be conducted in Tanzania. Since the researcher is of the opinion that the adverse effects of punishment are universal, only positive methods of behaviour management were included in the observation instrument.

Thus, modification of the methods on teachers reaction to inattention and misbehaviour to include negative methods of control would not be appropriate because of the disadvantages of using negative methods of controlling children.

Question 5: The Teachers' Use of Effective Instructional Methods

> Do teachers of students with mental retardation in special education classrooms in Tanzania use appropriate instructional methods based on North American literature?

As noted earlier, the teachers used appropriate instructional methods in most of the lessons observed. However, this researcher believes that more observations for each teacher are necessary before it is possible to make conclusions on the teachers' ability to use some of the methods, for example, pre-teaching skills/information to be learned later was not observed in any of the lessons. The researcher recommends more observations for each teacher because she was not able to assess whether the teachers observed did not know how to use some of the methods or whether they just did not have the opportunity to use them during the few observations made. For example, in the introduction phase of the lesson, the teachers could only use one method from each section during each lesson observed. Use of only one methods of lesson introduction does not necessarily mean that the teachers could only use that method. The researcher believes that, if the teachers were observed more times and at times asked to use skills they had not been observed using in previous lessons and/or asked questions on their reasons for using specific methods, a better representation of the methods used by the teachers of students with mental retardation in Tanzania and their rationale for their use would be achieved.

Discussion of research question five is presented below.

Section A : Introduction Phase of Instruction

It should be noted here that the observer found that teachers seemed to motivate and gain students' attention during the introductory phase in all the lessons observed.

Number 1: Motivating and Gaining Students' Attention

As a group, the observed teachers tended to use two methods in their attempts to motivate and gain students' attention. Mentioning of skills to be learned (method b) was observed in 54.6% observations and media was used in 34.1% of the observations, whereas "other methods," especially the use of songs, were observed in 34.1% of the observations. During most of the observed lessons, students seemed to be motivated and attentive most of the time. However, the researcher could not conclusively determine whether the teachers knew how to use the other methods of motivating and gaining student attention listed in the observation instrument because they were not used at all or they were used in very few lessons. The methods which were not used in any of the lessons or used in very few lessons are listed with the percent of observations in which they were observed stated in brackets: (a) predicts students will enjoy lesson (4.6% of the observations), (b) promises external rewards (11.4% of the observation), and (c) reminds of criteria (0% of the observations).

Number 2: Review of Related Previously Learned Materials

Questions were used to review related previously learned material in 63.6% observations. Written/oral quizzes were not used in any lesson, whereas summaries were used in 2/44 of the lesson to review related material previously learned. Most teachers considered quizzes to be inappropriate for students with low intellectual functioning in the programs for students with mental retardation in Tanzania. Written/oral quizzes could be used with some of the higher intellectually functioning students. Related, previously learned materials were reviewed when applicable in all but 2/44 of the lessons, 4.6% observations. Thus, a conclusion can be made that teachers reviewed previously learned material when necessary in most of the lessons. The fact that no teachers used written/oral quizzes in their review of related previously learned materials indicates consensus among the teachers as to its lack of relevance for the students taught.

Number 3: Pre-teaching

Pre-teaching parts of skills/information to be learned later was not observed in any of the 44 lessons observed. In 13.6% of the lessons observed, pre-teaching of skills/information to be learned later was not observed, when it would have been applicable. Pre-teaching would not have been applicable in the rest of the lessons (86.4% of the observations made). As no teacher was observed pre-teaching, teachers' knowledge and/or ability to use this method could not be effectively assessed.

Number 4: Statement of Purpose of the Lesson

Most teachers stated the purpose of the lesson in the introduction part of the lesson. However, there were 34.1% of the observations made in which teachers did not state the purpose of the lesson. Statement of the purpose of the lesson to students having severe mental retardation may seem illogical to some of the teachers as students may have problems understanding the language and long-term goals.

Section B: Presentation of Skills/Information

Teachers used instructional methods related to presentation of information/skills when applicable in most of the observed lessons. However, there were some methods such as the lecture method of presentation of new information/skills which were not used in any of the lessons observed. This limited the researcher's ability to assess the teachers' competence in the use of such instructional methods .

Number 1: Delivery of New Information/Skills

In delivery of new information and or skills, teachers tended to use (a) demonstration (method a) used in 77.3% of the observations made; (b) prepared hand-outs (method c) observed in 25% of the observations made; (c) questioning to check understanding (method e) observed in 90.9% of the observations made; (d) discussion (method g) observed in 79.5% of the observations made; (e) drill (method i) observed in 38.6% of the observations made;

(f) practical exercise, and experiments (method j) observed in 47.7% of the observations made; and (g) seat-work (method k) observed in 31.8% of the observations made. All other instructional behaviours in this section of the observation instrument were observed in less than 6/44 of the lessons. Teachers did not use the following methods to deliver information/skills when they would have be applicable: (a) demonstration (method a) in 6.8% of the observations made; (b) prepared hand-outs (method c) in 4.6% of the observations made; (c) media (method d) in 6.8% of the observations made; (d) questioning to check students understanding (method e) in 2.3% of the observations made (e) inviting and responding to students' questions (method f) in 6.8% of the observations made; and (f) game/contest (method l) in 6.8% of the observations made.

From the data above, it can be deduced that the observed teachers were well versed in the use of a wide variety of methods in their presentation of new skills/information.

Number 2: Clarity of Presentation of Skills and Materials

Teachers tended to use methods of instruction which fostered clarity of the presentation of new skills/information. There were only a few lessons in which effective instructional methods were not used when applicable. Teachers clarity in the presentation of new information/skills was rated as satisfactory in 97.7% of the observations made. Explanation of unfamiliar words, use of appropriate rate of speech, proper enunciation, and use of vocabulary at the students' level of understanding were observed in 100% of the observations made. There was appropriate use of monitoring students' attention in 97.7% of the observations made, drawing attention to difficult points in 95.5% of the observations made, avoiding distracters in 90.9% of the observations made, checking understanding in 84.1% of the observations made, presenting skills in small steps in 77.3% of the observations made, building in review in 70.5% of the observations made, and repeating or reteaching skills in 68.2% of the observations made.

There were, however, a few instances when effective instructional methods were not used when applicable as indicated below. In clarity of presentation of the material, there were two of the observation sessions (4.5%) in which the teachers, a) did not repeat or reteach information when students made consistent errors in responding to teacher questions and b) did not draw attention to difficult points, when these procedures were necessary. In one of the observation sessions (2.3% of the observations made), the teacher, a) did not have built-in review, b) did not check for understanding before moving to the next part of the lesson, and c) did not present information or skills in small steps, when necessary. The preceding data clearly indicate proper use of methods of insuring clarity in the lesson. Thus, there is no need for in-service training for the group of teachers observed, but there is need for prescriptive feedback for some of the teachers.

Number 3: Maintaining Attention

Teachers used most of the methods for maintaining attention appropriately in most of the lessons observed. Questions were asked whether students had hands up or not in 93.2% of the observations made. Media (all types of teaching aids) were used in 61.4% of the observations made; media was not applicable in 36.3% of the observations made. Instructional methods were changed when attention was diminishing in 25% of the observations made while change of instructional methods was not necessary in 26/44 of the lessons observed.

The observed teachers used questions and a variety of media in maintaining attention appropriately in all but 2.3% of the observations made. Teacher 7 did not use questions and did not use a variety of media in 1/3 of the lessons, when applicable. Instructional methods were not changed when attention was diminishing in 7/44 of the lessons, 15.9% of the observations made. Except for not changing instructional methods when attention was diminishing, teachers used all methods of maintaining attention when appropriate. The researcher believes that teachers who did not change methods of instruction were not aware that the attention of their students was diminishing. Some of these teachers were engrossed in the content they were teaching to the extent that they did not pay attention to the students' level of attention. This may have been a result of the researcher's presence during the lesson. Although most of the teachers observed seemed comfortable teaching with the observer in their classrooms, the effect of the knowledge that they were being observed may have lead to behaviour not normal in their everyday teaching.

Number 4: Teachers' use of Bloom's Taxonomy in the Presentation of Information and Skills

The knowledge level was used in all the lessons observed; the comprehension level was used in 43.2% of the observations made, while higher levels were used in 36.4% of the observations made. There was only one lesson (1/44 of the lessons observed) in which use of different levels of Blooms taxonomy was rated as inappropriate. Thus, teachers used the different levels of Bloom's taxonomy appropriately in all but one lesson. Although the use of different levels of Blooms' taxonomy was assessed as appropriate in most of the lessons observed, teachers may need to use higher levels of the taxonomy to provide more challenging instruction to their students.

Number 5: Sequencing of Instruction

Content of instruction was sequenced appropriately in most of the observed lessons. Sequencing from low to higher levels of Bloom's Taxonomy was observed in 21/44 of the lessons in which information was presented at more than one level. Presentation of skills from oral to written and from concrete to abstract was observed in 25% of the observations made. Except for one lesson in which the presentation from concrete to abstract was applicable; these methods of sequencing were not applicable in the other lessons observed. Presentation of sequencing of skills orally and at concrete level was the most appropriate for students in the classrooms observed due to the low intellectual functioning of the students. Teacher 8 did not sequence content of instruction to move from concrete to abstract or relate students' personal experience in 1/3 of the lessons when applicable. Furthermore, this teacher did not move from previously learned material to new content or end the lesson by summarising important points in 2/3 of the lessons. Teachers, 7, 9, and 14 did not end their lessons by summarizing main points when it would have been appropriate in 1/3 of the lessons. Thus, teacher 8 did not exhibit four techniques of sequencing content of instruction when it would have been appropriate. Ending lesson by summary of important points did not occur when applicable in 5/44 of the lessons, 11.4% of the observations made.

Section C: Monitoring Students' Understanding

The teachers observed used methods of monitoring student understanding in most of their lessons as demonstrated by the discussion of results of each cluster of items below. Teachers' monitoring of students' attention was one of the easier group of methods to observe and evaluate as teachers exhibited these instructional methods in almost all the lessons. Teachers observed were found to be competent in the use of techniques of monitoring students' behaviour and in teachers' questioning techniques. However, the teachers' handling of students who did not answer questions and the teachers, handling of incorrect answers were not done as well.

Number 1: Techniques of Monitoring Students' Understanding

The teachers observed received a rating of 4 (monitoring students understanding always when applicable) in 90.9% of the observations made and a rating of 3 (monitoring attention some of the time when applicable) in 9.1% of the observations made for their use of questions to monitor students' understanding. Teachers asked questions at the knowledge level in 100% of the observations made while questions were asked at the comprehension level in 50% of the observations made. Questions were asked at application and higher levels of the taxonomy in 31.8% of the observations made. Teachers distributed questions among all students in 97.7% of the observations made. There was only one lesson in which the techniques of monitoring student attention were not used appropriately. The data on techniques of monitoring students' attention indicates that the teachers observed were competent in the use of questions at different levels of the taxonomy.

Number 2: Teachers' Questioning Techniques

Teachers exhibited appropriate questioning techniques in 100% of the observations made in all but one of the questioning techniques in methods a to f. Some of the teachers observed did not use frequent praise and positive feedback for correct student responses when applicable. Teachers indicated lack of frequent praise and positive feedback in 11.4% of the observations made. Three teachers failed to provide frequent praise and positive feedback, one teacher in 3/3 of the lessons and the other two teachers in 1/3 of their lessons. The non-use of praise and positive feedback by one teacher in all 3/3 lessons is surprising as most of the other teachers used this instructional method in all the lessons, when applicable. Prescriptive feedback is recommended for the teachers who did not provide praise and positive feedback as applicable. In-service training is not recommended because all the other teachers used praise and positive feedback in all the lessons observed.

Number 3: Teachers Handling Incorrect Answers

Teachers handled incorrect answers appropriately in most of the lessons. However, there were a few instances when incorrect answers were not handled appropriately. Teachers failed to rephrase questions in 13.6% of the observations made and did not ask simpler questions in 15.9% of the observations made. Other inappropriate methods of handling incorrect answers were observed in 6.8% of the observations made. Thus, teachers failed to use the set of instructional methods assessing the teachers' handling of incorrect answer in 15 lessons when they would have been appropriate. Thus, teachers' handling of incorrect answers was one of the weakest areas in the instructional methods used by teachers observed. In-service training for all the teachers observed may be desirable.

Number 4: Teachers' use of Techniques for Handling Students who Do Not Respond to Questions

In general, teachers handled appropriately students who did not respond to questions. However, verbal cues were not used when appropriate in 2.3% of the observations made and the teachers did not use gestural cues when required in 4.6% of the observations made.

Physical cues were used appropriately in all lessons observed. Teachers did not answer questions and move on in 2.3% of the observations made, whereas teachers did not ask someone else to answer the questions when it would have been appropriate in 4.6% of the observations made. Teacher 14 did not use three techniques in this section when appropriate, teacher 8 did not use two techniques, while teachers 3 and 12 did not use one.

Section D: Use of Guided Practice

Number 1: Teachers' Provision of Time for Guided Practice

Time was provided for guided practice in 95.5% of the observations made. Ratings of the provision of time for guided practice were satisfactory (ratings of 3 or 4) in all but 2.3% of the observations made in which a rating of 2 was received.

Number 2: Teachers' Practices During Guided Practice

In most lessons where guided practice was used, "teachers' practices during guided practice" were rated as satisfactory (a rating of three or four). However, in 2.3% of the observations made, teachers (a) did not use prompts where applicable, (b) did not provide frequent practice, and (c) did not require choral group responses when applicable. Prompts were not faded when applicable in 11.4% of the observations made. In addition, teachers did not ask questions of all students in 4.6% of the observations made. Guided practice activities in the observed classes involved having the students copy letters or numbers from the chalk board onto slates or into exercise books.

Number 3: Reinforcement During Guided Practice

Although teachers used social praise, such as, students clap hands for students as reinforcement, in 93.2% of the observations made, they did not use other types of reinforcements which would have been appropriate. Teachers did not use descriptive praise when applicable in 45.5% of the observations made, and when used, unsatisfactory ratings were assigned to 6.8% of the observations made. Social praise was not used when applicable in 6.8% of the observations made, and 4.6% got an unsatisfactory rating. Social privileges were not used when applicable in 88.6% of the observations made and when used, unsatisfactory ratings were assigned to 6.8% of the observations made. Although token rewards, may seem a viable method of reinforcement, teachers in the programs observed would have great difficult amassing enough reinforcing items for the students to exchange with acquired tokens. The teachers observed lacked variety in their reinforcement during independent practice. This lack of variety may have been due to the relative ease with which teachers could use the type of social praise being used in the schools. Although students seem to be pleased with the social praise reinforcement used in schools, the researcher believes that the motivating value of the social praise may diminish with repeated use over time. The researcher also believes that use of more personalized and relevant descriptive praise (describing the behaviour the student has performed appropriately) in place of the use of the same verbal praise for all students in all situations may be more reinforcing and informative to the students. The words commonly used in the programs observed are, (kiswahili: Hongera! Imara! Wa!) which is a phrase congratulating the student on good performance. The only variation observed was the addition of the students' names to this verbal praise. In addition, there were two lessons in which a song was used praising each of the students when the whole class had done something worth reinforcing.

Section E: Use of Independent Practice

Number 1: Teachers' Provision of Time for Independent Practice

Time for independent practice was provided in 40.9% of the observations made. Of all the lessons in which time for independent practice was provided, only one lesson received an unsatisfactory rating. In the lesson where unsatisfactory ratings were received, activities irrelevant to the purpose of the lesson were assigned to the students.

Number 2: Teaching Methods Used During Time Provided for Independent Practice

Most teachers did not provide students with time for independent practice. Teachers did not use individual work-sheets in 2.3% of the observations made when applicable. Individual work-sheets were used in all but 1/44 of the lessons when applicable. The students' level of intellectual functioning and the subjects taught may have influenced provision of time for independent practice. For example, independent practice would not have been applicable in the communication lessons observed, whereas it was applicable in writing and mathematics lessons. In addition, independent practice activities which students with very low intellectual functioning could handle and on which they can concentrate for a long time may have been difficult to find. Although the researcher indicated earlier that it is easier for teachers in programs for students with mental retardation to obtain instructional materials and equipment than for teachers in the regular school programs, such materials are still quite limited restricting the teachers' ability to offer independent practice effectively for very low intellectually functioning students.

Section F: Classroom Rules and Routines

Number 1: Students' Knowledge of Classroom Rules and Routines

Students were aware of the rules and routines in most of the classrooms observed. Consequences for non-compliance were also appropriate in most of the observed programs. Students did not know the rules and routines of the classroom and the consequences for non-compliance with rules and routines in 18.2% of the observations made. Of the teachers who had consequences for non-compliance with classroom rules and routines, the consequences were inappropriate in 27.3% of the observations made. The lessons in which the students did not know the rules and routines were those classes with very low intellectually functioning students. The presence of inappropriate consequences for non-compliance with rules and routines seemed to depend on the program in which the teachers were. For example, in one special education program all the teachers observed had inappropriate consequences for non-compliance with inattention and misbehaviour. These inappropriate consequences included spanking, and using demeaning comments about a student. An example of demeaning language is that of one teacher who told students they were "Zero" if they could not answer questions. When asked why they used the specific methods of controlling inattention and misbehaviour, one teacher indicated that it was the policy of the program. The classes where consequences were inappropriate were in programs where the regulation was to use disciplinary measures similar to those used in the students' homes. Although the use of similar disciplinary measures at home and school is commendable because it offers continuity, teachers should encourage parents to use appropriate consequences instead of adopting inappropriate methods. The researcher was surprised that none of teachers observed used spanking as a disciplinary measure during the lessons observed. Even those teachers in programs which identified spanking as one of the disciplinary methods used, none of the teachers spanked students when the researcher was in the room. The researcher also observed that some of the teachers observed, including some of those who did not identify spanking as one of the disciplinary measure used in the programs, had a stick on their desks or somewhere else in the room. That the teachers may not have wanted the researcher to see them using corporal punishment led the researcher to conclude that most teachers may have believed that the use of corporal punishment was wrong whether it was accepted in the school or not. The researcher also learned from the Tanzanian educators at the University of Alberta that the Tanzanian Ministry of National Education has regulations restricting the use of corporal punishment. Therefore, it is imperative that teachers be trained in the use of alternative methods of controlling behaviour.

Number 2: Teachers' Reaction to Inattention and Misbehaviour

As a group, the teachers observed did not stop minor but extended misbehaviour in 11.4% of the observations made and did not stop disruptive behaviour quickly in 6.8% of the observations made. In addition, teachers failed to praise someone else's behaviour when applicable in 34.1% of the observations made. As individuals, teachers 7, 8, & 9 did not react to misbehaviour and inattention as appropriate. The teachers did not (a) stop minor but extended misbehaviour when applicable, (b) did not stop disruptive behaviour quickly, and (c) did not praise someone else's behaviour in one or more of their lessons. Teacher 11 did not stop minor but extended behaviour or praise someone else's good behaviour in 1/3 of the lessons observed. Teachers 2, 10, 12, 13, & 14, did not praise someone else's good behaviour in at least one of their lessons. Praising someone else's good behaviour to control inattention and misbehaviour should be included in in-service training for the teachers observed as most of these teachers did not use this method as necessary. Teachers 7, 8, 9, and 11 should be provided with training in the use of all the skills of controlling student inattention and misbehaviour discussed in this section of the observation instrument. The observed teachers indicated weakness in the use of instructional methods used for controlling misbehaviour and inattention. This weakness might be caused by differences in the beliefs and practices in the disciplining of children in the Tanzanian society and North American societies. The researcher is of the opinion that in-service training of teachers observed in the use of positive methods of controlling misbehaviour would be very beneficial to the teachers. As indicated earlier, the teachers observed may have indicated that use of corporal punishment was undesirable by avoiding its use in the presence of the researcher. These teachers may however not have the necessary skills to enable them to use positive control methods.

Question 6: Instructional Areas Requiring Improvement

> Does the observational instrument identify specific areas of instruction requiring improvement? That is does it indicate the need for in-service for several teachers and/or prescriptive feedback to a specific teacher?

This observation instrument identified specific areas of instruction requiring improvement. In the following discussion, in-service needs and prescriptive feedback needs are identified.

Identified In-service Needs of the Teachers Observed

Any of the methods in which three or more teachers failed to display teaching behaviour when applicable has been recommended as an area for in-service training for the teachers. Another criterion used for determining whether training in an instructional method should be included in the in-service training is the assessment of whether methods not observed could have enriched the lesson if used. All the teachers observed may benefit from the recommended in-service training by gaining new insight into the use of different methods of instruction as well as through interaction with other teachers. The instructional areas in which in-service training would be beneficial to the teachers observed are identified below.

1. Although students involved in all the lessons observed appeared to be motivated and the teachers gained students' attention easily, teachers in this group may benefit from an in-service course on the use of the methods in Section A, Number 1, Methods a to e., to motivate and gain students' attention. These methods include (a) making statements predicting enjoyment, (b) mentioning skills to be learned later, (c) promising external rewards, (d) reminding students of later requirements, and (e) using media. Such training could equip teachers with a greater knowledge and competence in the use of these methods in order to add variety to their lessons.
2. In-service training in the use of pre-teaching as a method of instruction may be beneficial to teachers in this group as no teachers used it.
3. In-service training in statement of purpose of the lesson would be advantageous to this group

of teachers as the statement of purpose was rated as unsatisfactory in 34.1% of the observations made.

4. A fourth instructional method which should be included in an in-service training program is avoiding use of distractors to ensure clarity of the presentation of new skills/information (Section B, Number 2, Method f). This teaching method should be included in in-service training as 5/15 of the teachers did not avoid distractors in their lessons.
5. Changing instructional methods when attention is diminishing (Section B, Number 3, Method c) should be included in in-service training as 5 teachers in total of 7/44 of the lessons did not use this method when applicable.
6. Training on the presentation of skills/ information at different levels of Bloom's Taxonomy (Section B, Number 4, Method b and c) is also recommended as an in-service training topic for the group of teachers observed. Restricted use of the higher levels of Bloom's taxonomy is acceptable due to the low levels of intellectual functioning of individuals with mental retardation. However, this method of instruction should be included in an in-service course to strengthen the teachers' ability to use higher levels of the taxonomy when applicable.
7. Observed teachers should also be provided with in-service training in ending lessons by summarising main points (Section B Number 5, Method f). Four teachers did not end their lessons with a summary in a total of 5/44 of the lessons observed.

8. In-service training in appropriate ways for teachers to handle students' incorrect answers should be provided for the group of teachers observed (Section C, Number 3, Methods a and b). Four of the teachers observed did not use appropriately methods of handling students' incorrect answers.
9. Fading of prompts once students become more competent in the use of skills (Section D, Number 2, Method b) should be included in in-service training for the teachers observed. Teachers failed to fade prompts as appropriate during guided practice in 5 of the 44 lessons observed.
10. Use of techniques for handling students who do not respond to questions (Section C, Number 3, Method a and b) should be included in in-service training for the teachers observed. Four teachers did not use appropriately techniques of handling students who do not respond to questions.
11. Teachers should receive training on the use of reinforcement during guided practice (Section D, Number 3, Methods a to e). The teachers observed used social praise for reinforcement in their lessons. Social praise used in all lessons was restricted to clapping of hands with accompanying verbal praise. Descriptive praise was also observed in a few lessons. Other types of reinforcement were not observed in any of the lessons. Thus, the researcher believes that the teachers observed would benefit from an in-service course on the use of different methods of reinforcing students.
12. The importance of students' knowledge of

classroom rules and routines and how teachers can achieve this goal should be included in in-service training for the observed teachers (Section F, Number 2). The group of teachers observed would benefit from in-service training to enhance students' knowledge of classroom rules and routines as well as the use of appropriate consequences for non-compliance with classroom rules and routines.

13. In-service training should be provided in appropriate teacher reaction to inattention and misbehaviour (Section F, Number 2). Nine of the 15 teachers failed to display appropriate reactions to students' inattention and misbehaviour. Thus, in-service training in appropriate reactions to student inattention and misbehaviour would be beneficial to the teachers observed.

Prescriptive Feedback

1. Teacher 7 should be provided prescriptive feedback in the use of methods of maintaining attention as there were instances when this teacher did not use appropriate methods to maintain students' attention. These instances included failure to (a) ask questions of any students whether they volunteer or not, (b) use a variety of media, and (c) change instructional methods when applicable in one lesson and (d) change instructional method when attention was diminishing in second lesson.
2. Prescriptive feedback should be provided to teacher 8 on the use of sequencing of instruction. Teacher 8 did not exhibit four techniques in sequencing of instruction. The

techniques the teacher failed to exhibit included (a) moving from concrete to abstract materials, (b) relating instruction to students' personal experience, (c) moving from the content of previous instruction to new content and (d) ending lessons by summarising main points.

3. Prescriptive feedback should be provided to the three teachers 6, 7, & 8 who failed to use praise and positive feedback in a total of 5/44 of the lessons. In-service training for all teachers was deemed unnecessary as all the other teachers used praise and positive feedback in all the lessons observed.
4. Teacher 13 should be provided with prescriptive feedback on the provision of guided practice as this teacher failed to display this method, when applicable.

Inter-Observer Reliability

The inter-observer reliability calculation posed some problems for the researcher because of the small sample included in the study. The research was thus limited to the use of inter-observer percent agreement figures as all other statistical programs which could have been used are more appropriate for larger samples. In addition, the amount of missing data caused by the fact that some of the instructional methods were not observed also caused difficulties in analysis of the inter-observer reliability. For example in Part II, Section A, where only the instructional methods were identified and in which the teachers displayed only a few of the instructional methods possible, there was a lot of missing data.

The percent agreement of the two observers varied immensely with 100% agreement in some methods and as low as 22.2% agreement in others. The low percent agreement may indicate that the two observers were using different criteria for assessing the specific method of instruction. The second rater did not receive any special training in the use of the observation instrument. This observer also did not have experience in the use of observations procedures. Thus, the observation instrument received a very stringent test of reliability- the worst case scenario in which an untrained, inexperienced observer used the instrument. As mentioned earlier it is possible that untrained and inexperienced people could use the observation instrument. The lack of observer training in the use of the observation instrument and in the use of observation procedures in general, may have contributed greatly to the low inter-observer agreement. The researcher believes that with rigorous training, different observers could learn to use the instrument in a reliable manner to assess the instructional methods used by the teachers. It is essential that observers receive instruction in the use of the instrument and that they achieve at least some minimum acceptable level of reliability. However, it may be necessary to make some modifications to some of the items on the observation instrument. Some of the instructional methods which need clarification are those in the introductory phase of the lesson. For example, the method of motivating and gaining students' attention by predicting enjoyment should be clarified on the observation instrument so that the observers only record this as observed when the teacher makes a statement predicting enjoyment and not when enjoyment is only implied by their actions.

Other items on the observation instrument that may need to be modified because of low inter-observer agreement are listed below. The percentage agreement between the observers is indicated in parentheses. Section A: (a) Predicts enjoyment (33.3%), (b) Use of summary in review of materials learned earlier (33.3%), (c) Pre-teaching, observed (44.4%) and not applicable (22.2%), (d) Maintains attention (48.2%). Section B: (a) Media (44.4), (b)Inviting and responding to students' questions (33.3), (c) Focused discussion (44.4%), (d) Seat work or homework assignment (55.6%), (e) Teacher repeats or reteaches information if necessary (55.6%), (f) Explanation of unfamiliar words and concepts (33.3%), (h) Avoids use of distracters (44.4%), (i) Uses of a variety of media to maintain attention (55.6%), (j) Frequently changing instructional methods (55.6%), and (k) Presentation of materials at lower level of Bloom's taxonomy before materials at higher levels (55.6%). Section C: Providing answer and moving on to other questions (22.2%). Section D: (a) Provision of descriptive praise (33.7%), (b) Social privileges (22.2%) and (c) Token rewards (55.5%) and in Section F: (a) Teacher stops extended but non-disruptive behaviour non-disruptively (44.4%), (b) Stopping disruptive behaviour quickly (55.6%), and (c) Teacher praises someone else's good behaviour (37.5%).

Before changes are made, additional reliability studies should be conducted with trained and experienced observers.

General Comments on the Observation Instrument, the Procedure and the Training of Observers

The researcher found observing the lessons and taking the anecdotal records easy to do. However, any recording of the teaching methods on the observation instrument was difficult to do during the lesson. The researcher also experienced some difficulties in making decisions as to whether some of the teaching methods would have been applicable. The difficulty mainly occurred when the lesson was well taught and when instructional methods used were appropriate. The researcher found difficulties making decisions as to whether any other methods of instructional methods were applicable. This was complicated further by the fact that teachers in a single lesson could not be expected to use all of the instructional methods in all of the sections of the observation instrument. For example, in the input phase of the lesson, there were 12 teaching methods of delivery of new information/skills observed. However, in the researcher's opinion the observation instrument was adequate for the purpose of the study, which was to survey the instructional methods of teachers in programs for students with mental retardation.

Training of individuals expected to use the observation instrument may take a long time since the results of the inter-observer agreement indicate a need to discuss the meaning of each item and the criteria for placing it in each category.

The procedure of conducting classroom observation and completing the observation instrument may be too time consuming to be applicable in a system with very few supervisory personnel in the all areas of education, and especially in area of special education. A shorter edition of the current observation instrument may be more appropriate for Tanzanian special education personnel to use.

In spite of the shortcomings of the observation instrument, it may be useful as a guide to teachers to evaluate and improve their own performance. The observation instrument may also be useful in making in-service training more prescriptive, time-saving and efficient in focusing on particular teacher needs.

Conclusion

The results of the current study indicate that special education experts and teachers think that the same methods of effective instruction are suitable for both North America and Tanzania. However, they offered some suggestions for modification of the observation instrument for its improvement. Only clarification of items was made, as most of the recommended changes were not appropriate, when a criteria of the normative function and the goals of instruction for students with mental retardation were used to evaluate them.

The teachers of students with mental retardation generally used effective instructional methods identified in the North American literature. However, there were several areas of instruction which were identified as needing improvement. In-service training for all of the teachers or for a small group of teachers, or prescriptive feedback for specific was teachers recommended. The procedures of observing and completing the observation instruments is too time consuming to be practical for everyday use. A suggestion was made for a shorter version of the observation instrument. However, the observation instrument as used served the purpose of this study adequately as it helped identify instructional methods used in programs for students with mental retardation in Tanzania.

Recommendation for Future Research

1. The observation instrument developed for the current study should be translated into Kiswahili and used in similar research to assess its applicability to the Tanzanian context before the instrument is recommended for widespread use in special programs in Tanzania.
2. The observation instrument should be used with a larger number of teachers including teachers with less than two years' experience, teachers from all regions and

as well as teachers in programs for students having other handicaps,i.e., visual handicaps, hearing handicaps, and orthopaedic handicaps.

3. Teachers included in a similar study should be observed six times to enable the researcher to observe use of all the methods of effective instruction in more detail. The observers will then be able to record the frequency of occurrence of each method instead of the general rating method used in the current research.

4. Teachers should be observed in an impromptu manner to avoid any special preparations by the teacher which may occur when they know of a forthcoming observation. There were some indications that some of the teachers retaught lessons which had been previously taught. For example, the researcher happened to hear one teacher teaching a lesson from outside and was surprised when the teacher repeated the same lesson with the same students during an observation. Impromptu observations would be used to determine the frequency with which the teachers use effective instructional methods in their regular teaching.

5. Before modification of any of the items on the observation instrument is made, additional reliability studies should be conducted with trained and experienced observers. As well, follow-up studies should be conducted on the specific items on which low amounts of agreement were obtained to determine what specific aspects of the items led to lack of agreement.

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APPENDIX A

Special Education Instructional Delivery Evaluation Instrument

Instructions: This observation instrument is constructed for use in recording observations of teachers of students with mental retardation. The observation instrument should provide information on a teacher's instructional delivery procedures. Users of this instrument need training in its use to increase the validity and reliability of the data recorded. Part I (anecdotal data) should be recorded in the classroom during observation concurrently with audio-taping of the teachers' instruction of an entire lesson. Part II of this observation instrument can be completed in part during and following the observation with the help of the audio-tape, or it can be completed entirely form the information on the audiotape, after the observation.

General Information

Name of teacher: ________________________________
Highest academic level attained by the teacher: ____________
Teacher's experience in the regular classroom: ___Yrs___ Mths.
Teacher's experience with students having mental retardation:
____Yrs_____Mths.
Name of the Instructional Program where the observation takes place:
____
Age of the students in the program: ________________________
Functional Level of students (e.g., educable, trainable, or________
dependent): ____
Subject taught during observational period (e.g. functional
mathematics): ____
Group Size: ____
Date of Observation: _______________________________________
Length of Lesson observed: _________________________________
Recording interval from _________ to _______________________
Name of observer: ____
Record whether this is the 1st, 2nd, or 3rd observation: __________
Purpose of the lesson (knowledge and skills):_______________
____
____
Are the skills being taught for the first time (acquisition)? _____
Are students being taught to perform new skills in a rapid, consistent
manner (fluency)? _______________________________________
Are students being taught to perform new skills in a variety of
conditions (generalization training)? ____________________
Are students being tested in their ability to recall skills taught
in the near or distant future (maintenance training)?_______________
Time used to record and interpret information on this observation form:
____

PART I

Directions: Describe the instructional setting. Including instructional grouping arrangement, the number and kinds of tasks occurring. For example, students are seated in a circle in front of the teacher. The teacher is reading from a book in which singular and plural nouns are mentioned on one page, on the opposite page are pictures of singular and plural objects corresponding to those mentioned on the other page. The teacher reads a passage and then shows the picture to the students and randomly asks one of them to point to the appropriate singular or plural object(s).

Observations

Directions: Describe any unusual occurrences (e.g., interruption by parent, visitors or school administration, or one of the students getting sick) during the observation.

Anecdotal notes

PART TWO

Directions: For part two indicate with a (✓) any procedures observed in each lesson unit observed. During or following the observation circle the number that is most representative of the observed behaviour in items which require rating. The following rating guide should be used:

4 Means the teacher usually uses when required;
3 Means the teacher sometimes uses when required:
2 Means the teacher rarely uses when required;
1 Means the teacher never uses when required.

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
Section A: Lesson Introduction.				
1. Teacher in lesson introduction attempts to motivate students and gain attention by				
(a)___ making statements predicting that group will enjoy the activity				
(b)___ mentioning information or skills the group will learn				
(c)___ promising external reward for good attention or work				
(d)___ Reminding students, about later requirements, such as tests, based on the lesson				
(e)___ using media to motivate students (describe) ____________				
(f)___ Other (specify): ____________				
(g) RATE: teacher's use of above techniques for gaining and maintaining student attention ----	4	3	2	1
2. Teacher reviews related materials previously learned through				
(a)___ questions				
(b)___ quizzes				
(c)___ summary				
(d)___ not observed				
(e)___ not applicable				
(f)___ other observations or comments: ____________				
3. Teacher pre-teaches parts of skill\knowledge to be taught later				
(a)___ observed				
(b)___ not observed				
(c)___ not applicable				
(d) other observations and comments: ____________				
4) Statement of purpose of the lesson				
(a)___ teacher shares with students the purpose of the lesson				
(b)___ teacher specifies objectives in terms of what students are expected to learn				
(c)___ Other observations and comments: ____________				
(d)___ not applicable				
(e) Rate: teacher states goals of instruction as above--	4	3	2	1

Instructions: In all the following categories, indicate whether the teacher behaviours being rated are applicable to the lessons being observed Each category should be rated as
P:✓ present or
P:X not present
and A:✓ applicable or
A:X not applicable

e.g.,	P	A
(a)	✓	✓
(b)	X	X
(c)	X	✓

Section B: Presentation of the new material or the input phase

1. Delivery of new information or skills: Which of the following instructional methods are used in accomplishing the objectives of the lesson?
(P stands for present and A stand for Applicable)

P | A Make an X or a ✓ under both P and A
(a) _ | _ demonstration in front of the class
(b) _ | _ lecture
(c) _ | _ repaired hand-outs (diagrams or teaching aids)
(d) _ | _ media (filmstrips, slides, tapes, records)
(e) _ | _ questioning students to check understanding
(f) _ | _ inviting and responding to students questions
(g) _ | _ focused discussion (prepared sequenced questions)
(h) _ | _ students take turns reading or reciting
(i) _ | _ drill (flash cards, math tables, chorus questions)
(j) _ | _ practical exercise or experiment
(k) _ | _ seat-work or homework assignment
(m) _ | _ game, contest
(m) _ | _ Other (specify) ____________________
(Adapted from Good and Brophy, 1978)

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
(n) RATE: teacher demonstrates or models skills to be learned and materials are used (teacher spends a lot of time in demonstration, repeats the skills /information, and uses multiple examples)________	4	3	2	1

2. Clarity of presentation of material
P | A Make an X or a ✓ under both P and A
(a) _ | _ teacher repeats or reteaches information necessary such as when students make consistent errors in responding to teacher questions
(b) _ | _ the lesson has a built-in review
(c) _ | _ teacher explains unfamiliar words and concepts

teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.

(d) _ | _ the teacher monitors, through questioning and other activities, and adjusts the lesson to provide more clarity
(e) _ | _ the vocabulary used is at the students level of comprehension
(f) _ | _ the teacher avoids the use of distracters such as "ee", "mm" and "sawa". These are kiswahili expressions commonly used by teachers which distract students but which do not enhance student understanding
(g) _ | _ teacher's rate of speech is appropriate (students have no difficulties keeping up with the teacher directions)
(h) _ | _ teacher uses good enunciation
(i) _ | _ teacher checks understanding before moving to the next part of the lesson
(j) _ | _ draws attention to difficult points
(k) _ | _ teacher presents skill/information in small steps (Adapted from Good & Brophy, 1978, MacCannell & Young, 1980)
(l) - | - other observations and comments: ________

____

(m) RATE: the extent to which a to m above are observed --	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
	4	3	2	1

3. Maintaining attention:
P | A Make an X or a ✓ under both P and A
(a) _ | _ teacher asks questions to any students whether they have their hands up or not
(b) _ | _ teacher uses a variety of media (Specify): ________________________________
(c) _ | _ teacher frequently changes instructional methods when it appears that the students attention on an activity is diminishing.
(d) _ | _ Other observations or comments: ____________
____

4. At which of the following levels of Bloom's taxonomy was the information or skill presented?
P | A Make an X or a ✓ under both P and A
(a) _ | _ knowledge (involves students remembering, memorizing, recognizing and recalling information) in the same form as initially taught.
(b) _ | _ comprehension (involves students interpreting, translating, extrapolating and describing in own words)
(c) _ | _ application and other higher levels of the taxonomy (e.g., applies knowledge and skills to problems that are different from, but parallel to those provided during instruction)

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
(d) ___ Other observations and comments:__________				
(e) RATE: the extent which the teacher uses different levels of Bloom's taxonomy				
(i) knowledge:________________________	4	3	2	1
(ii) comprehension:____________________	4	3	2	1
(iii) higher levels of the taxonomy:________	4	3	2	1
5. Sequencing of content of instruction				
P | A Make an X or a ✓ under both P and A				
(a) _ | _ materials at the lower level of Bloom's taxonomy were presented before the material at the higher level				
(b) _ | _ moves from concrete to abstract (hands on to symbols, blocks to numerals)				
(c) _ | _ moves from content of previous instruction to new content				
(d) _ | _ relates student's personal experiences to new content				
(e) _ | _ moves from oral to written work				
(f) _ | _ ends by summarizing main points in the lesson (closure)				
(Adapted from MacCannell and Young, 1980)				
(g) _ | _ Other (Specify)________________________				
Section C: Monitoring Student Understanding				
1. Teacher's techniques for student understanding monitoring				
P | A Make an X or a ✓ under both P and A				
(a) _ | _ teacher asks questions to monitor student's understanding (indicate frequency)------------------------------	4	3	2	1
(b) _ | _ teacher asks questions at the different levels of Bloom's taxonomy: Indicate the levels observed below.				
_ | _ (i) knowledge (involves students remembering, memorizing, recognizing and recalling information)				
_ | _ (ii) comprehension involves students interpreting, extrapolating and describing in own words)				
_ | _ (iii) application and above (requires students to engage in problem solving and applying information to produce some results)				
(c) _ | _ questions are distributed among all students (those who volunteer and non-volunteers)				
(d) _ | _ other observations and comments:__________				

teacher usually uses when required,
teacher sometimes uses when required,
teacher rarely uses when required,
teacher never uses when required.

2. Questioning techniques used

P | A Make an X or a ✓ under both P and A
(a) _|_ teacher asks one question at a time, and waits before asking for a response.
(b) _|_ teacher corrects student errors consistently and immediately.
(c) _|_ teacher praises frequently and gives positive feedback when student responses are correct.
(d) _|_ state questions as clearly and concisely
(e) _|_ teacher uses age appropriate language while questioning
(f) _|_ teacher attends to the responding student (adapted from Good & Brophy,1984; MacCannell & Young 1980)

3. Handling incorrect answers

P | A Make an X or a ✓ under both P and A
(a) _|_ teacher rephrases question
(b) _|_ teacher asks a similar but simpler question
(c) _|_ other observations and comments: __________

---

4. Handling students who provide no answers to questions: teacher used the following types of cues

P | A Make an X or a ✓ under both P and A
(a) _|_ gives students verbal clues to help them come up with appropriate responses
(b) _|_ uses gestural cue, for example, if a student needs to learn how to grate coconut using "Mbuzi", the traditional instrument used for grating, the instructor can make appropriate movement with the hands to remind the student without actually grating.
(c) _|_ uses physical cue, in the example of grating coconut given above, the instructor could place his hands on the students hands to prompt the students response.
(d) _|_ provides the answer and moves to another question
(e) _|_ asks another student to answer the question
(f) _|_ other observations and comments: __________

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
Section D: Guided Practice 1. Does the teacher provide time for guided practice (involves giving students opportunity to practice while giving them necessary help to perform skills correctly) in the lesson?				
___ yes: If yes rate the frequency -------------	4	3	2	1
___ no				
___ other observations and comments:___________				
2. Teachers' practices during guided practice include the following:-				
P A Make an X or a ✓ under both P and A				
(a) _ _ use of prompts to elicit appropriate behaviour (using cues or hints, such a verbal or gestural hints of the required response)				
(b) _ _ fades prompts used until no prompts are necessary for performance of skill				
(c) _ _ provides frequent practice				
(d) _ _ asks questions to all students				
(e) _ _ uses choral group response				
(f) _ _ Other observations and comments: ___________				
(g) RATE: the frequency with which teacher uses prompts to elicit performance from students:__	4	3	2	1
3. Indicate the type of reinforcement used by the teacher and rate its use				
P A Make an X or a ✓ under both P and A				
(a) _ _ descriptive praise (such as stating to the child "I like the way you are working quietly at your desk"). RATE: ------------	4	3	2	1
(b) _ _ social praise, e.g., nodding or smiling (specify):_____________________ RATE:______	4	3	2	1
(c) _ _ social privileges, e.g. a chance to discuss something of interest with the teacher. RATE: --------------------------	4	3	2	1
(d) _ _ food rewards. RATE: -----------------------	4	3	2	1
(e) _ _ token rewards. RATE:----------------------	4	3	2	1
(f) _ _ other observations and comments:__________				
Section E: Independent Practice 1. Does the teacher provide time for independent practice (giving students opportunity to practice acquired skills or information without teachers help?				
___ Yes: If yes rate the frequency----------------	4	3	2	1
___ No				
___ Other observations and comments: ____________				

2. Teacher's practices during independent practice include the following:-

	P	A	Make an X or a ✓ under both P and A	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
(a)	_	_	providing students with individual work-sheets				
(b)	_	_	assigning students individual work-sheets				
(c)	_	_	other observations and comments: ____________				

Section 6: Classroom Management Skills Used

1. Classroom rules and routines

	P	A	Make an X or a ✓ under both P and A	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
(a)	_	_	the teacher has well established classroom rules and routines, these are procedures used in activities such as distributing materials, moving from one activity to another, and entering the classroom after recess				
(b)	_	_	the consequences are well known by the students				
(c)	_	_	the consequences for non compliance with rules and routines are appropriate (adapted from Good & Brophy, 1978)				
(d)	_	_	other (specify): ____________				

2. Teacher's reaction to inattention and misbehaviour

	P	A	Make an X or a ✓ under both P and A	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
(a)	_	_	teacher ignores brief, non-disruptive misbehaviour				
(b)	_	_	teacher stops minor, but extended misbehaviour non disruptively, e.g., uses non-verbal cues such as eye contact, gestures, touch or moves close to the misbehaving student				
(c)	_	_	teacher stops disruptive behaviour quickly, e.g., calls student's name, or calls for attention or work but does not over dwell on misbehaviour.				
(d)	_	_	teacher praises someone else's good behaviour (adapted from Good & Brophy, 1978)				
(e)	_	_	other (specify): ____________				

APPENDIX B

Special Education Instructional Delivery Evaluation Instrument

Instructions: This observation instrument is constructed for use in recording observations of teachers of students with mental retardation. The observation instrument should provide information on a teacher's instructional delivery procedures. Users of this instrument need training in its use to increase the validity and reliability of the data recorded. Part I (anecdotal data) should be recorded in the classroom during observation concurrently with audio-taping of the teachers instruction of an entire lesson. Part II of this observation instrument can be completed in part during and following the observation with the help of the audio-tape, or it can be completed entirely form the information on the audiotape, after the observation.

General Information

Name of teacher: 1
Highest academic level attained by the teacher: RT
Teacher's experience in the regular classroom: 14 Yrs 0 Mths.
Teacher's experience with students having mental retardation: 2 Yrs 3 Mths.
Name of the Instructional Program where the observation takes place: School 1
Age of the students in the program: 10 to 15 Yrs old.
Functional Level of students (e.g., educable, trainable, or dependent): Educable
Subject taught during observational period (e.g. functional mathematics): Functional communication
Group Size: 7 students
Date of Observation: 25th October, 1990.
Length of Lesson observed: 15 minutes
Recording interval from 9:10 am. to 9:25 am.
Name of observer: Mary Mboya
Record whether this is the 1st, 2nd, or 3rd observation: 1st
Purpose of the lesson (knowledge and skills): To improve student's oral communication through having them introduce themselves and tell stories.
Are the skills being taught for the first time (acquisition)? No
Are students being taught to perform new skills in a rapid, consistent manner (fluency)? No
Are students being taught to perform new skills in a variety of conditions (generalization training)? No
Are students being tested in their ability to recall skills taught in the near or distant future (maintenance training)? Yes
Time used to record and interpret information on this observation form: 45 minutes

PART I

Directions: Describe the instructional setting. Including instructional grouping arrangement, the number and kinds of tasks occurring. For example, students are seated in a circle in front of the teacher. The teacher is reading from a book in which singular and plural nouns are mentioned on one page, on the opposite page are pictures of singular and plural objects corresponding to those mentioned on the other page. The teacher reads a passage and then shows the picture to the students and randomly asks one of them to point to the appropriate singular or plural object(s).

Observations

Students are seated in rows facing the teacher who is standing behind her table. The teacher tells the students the purpose of the lesson. She demonstrates how to introduce oneself as students had previously learnt. The teacher leads discussion through focused questions. Each student introduces themselves stating their full names and where they live.

The teacher tells the story of "Kaume Kenge" a story about a disobedient child. The teacher asks students questions on the story. Students take turns telling stories.

A teachers aid is present during the lesson and goes to any students who exhibit signs of inattention or misbehaviour. Thus the teacher does not concern herself with class management. The students were in general attentive and well behaved.

Directions: Describe any unusual occurrences (e.g., interruption by parent, visitors or school administration, or one of the students getting sick) during the observation.

Anecdotal notes

No unusual occurrences were observed during this lesson.

PART TWO

Directions: For part two indicate with a (✓) any procedures observed in each lesson unit observed. During or following the observation circle the number that is most representative of the observed behaviour in items which require rating. The following rating guide should be used:

4 Means the teacher usually uses when required;
3 Means the teacher sometimes uses when required:
2 Means the teacher rarely uses when required;
1 Means the teacher never uses when required.

teacher usually uses when required,
teacher sometimes uses when required,
teacher rarely uses when required,
teacher never uses when required.

Section A: Lesson Introduction.

1. Teacher in lesson introduction attempts to motivate students and gain attention by
(a)___ making statements predicting that group will enjoy the activity
(b) ✓ mentioning information or skills the group will learn
(c)___ promising external reward for good attention or work
(d)___ Reminding students, about later requirements, such as tests, based on the lesson
(e)___ using media to motivate students (describe) ____________
(f)___ Other (specify): ____________
(g) RATE: teacher's use of above techniques for gaining and maintaining student attention ---- [✓ 4] 3 2 1

2. Teacher reviews related materials previously learned through
(a)___ questions
(b)___ quizzes
(c)___ summary
(d) ✓ not observed
(e)___ not applicable
(f)___ other observations or comments: ____________

3. Teacher pre-teaches parts of skill\knowledge to be taught later
(a)___ observed
(b)___ not observed
(c) ✓ not applicable
(d) other observations and comments: ____________

4) Statement of purpose of the lesson
(a) ✓ teacher shares with students the purpose of the lesson
(b)___ teacher specifies objectives in terms of what students are expected to learn
(c)___ Other observations and comments: ____________
(d)___ not applicable
(e) Rate: teacher states goals of instruction as above-- [✓ 4] 3 2 1

Instructions: In all the following categories, indicate whether the teacher behaviours being rated are applicable to the lessons being observed Each category should be rated as
P:✓ present or
P:X not present
and A:✓ applicable or
A:X not applicable

e.g.,	P	A
(a)	✓	✓
(b)	X	X
(c)	X	✓

Section B: Presentation of the new material or the input phase

1. Delivery of new information or skills: Which of the following instructional methods are used in accomplishing the objectives of the lesson?
(P stands for present and A stand for Applicable)

	P	A	Make an X or a ✓ under both P and A
(a)	✓	✓	demonstration in front of the class
(b)	X	X	lecture
(c)	X	X	repaired hand-outs (diagrams or teaching aids)
(d)	X	X	media (filmstrips, slides, tapes, records)
(e)	X	X	questioning students to check understanding
(f)	X	X	inviting and responding to students questions
(g)	✓	✓	focused discussion (prepared sequenced questions)
(h)	X	X	students take turns reading or reciting
(i)	X	X	drill (flash cards, math tables, chorus questions)
(j)	X	X	practical exercise or experiment
(k)	X	X	seat-work or homework assignment
(m)	X	X	game, contest
(m)	X	X	Other (specify) ________________

(Adapted from Good and Brophy, 1978)

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
(n) RATE: teacher demonstrates or models skills to be learned and materials are used (teacher spends a lot of time in demonstration, repeats the skills /information, and uses multiple examples)________	[✓ 4]	3	2	1

2. Clarity of presentation of material

	P	A	Make an X or a ✓ under both P and A
(a)	X	X	teacher repeats or reteaches information necessary such as when students make consistent errors in responding to teacher questions
(b)	X	X	the lesson has a built-in review
(c)	X	X	teacher explains unfamiliar words and concepts
(d)	✓	✓	the teacher monitors, through questioning and other activities, and adjusts the lesson to provide more clarity

(e) ✓ | ✓ the vocabulary used is at the students level of comprehension

(f) ✓ | ✓ the teacher avoids the use of distracters such as "ee", "mm" and "sawa". These are kiswahili expressions commonly used by teachers which distract students but which do not enhance student understanding

(g) ✓ | ✓ teacher's rate of speech is appropriate (students have no difficulties keeping up with the teacher directions)

(h) ✓ | ✓ teacher uses good enunciation

(i) ✓ | ✓ teacher checks understanding before moving to the next part of the lesson

(j) X | X draws attention to difficult points

(k) X | X teacher presents skill/information in small steps (Adapted from Good & Brophy, 1978, MacCannell & Young, 1980)

(l) - | - other observations and comments: ________

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when-required.
(m) RATE: the extent to which a to m above are observed --------------------------------------	4	3	2	1

3. Maintaining attention:

P | A Make an X or a ✓ under both P and A

(a) ✓ | ✓ teacher asks questions to any students whether they have their hands up or not

(b) X | X teacher uses a variety of media (Specify): ________

(c) X | X teacher frequently changes instructional methods when it appears that the students attention on an activity is diminishing.

(d) _ | _ Other observations or comments: ________

4. At which of the following levels of Bloom's taxonomy was the information or skill presented?

P | A Make an X or a ✓ under both P and A

(a) ✓ | ✓ knowledge (involves students remembering, memorizing, recognizing and recalling information) in the same form as initially taught.

(b) X | X comprehension (involves students interpreting, translating, extrapolating and describing in own words)

(c) X | X application and other higher levels of the taxonomy (e.g., applies knowledge and skills to problems that are different from, but parallel to those provided during instruction) teacher usually uses when required, | teacher sometimes uses when required, | teacher rarely uses when required, | teacher never uses when required.

(d) ___ Other observations and comments:__________

(e) RATE: the extent which the teacher uses different levels of Bloom's taxonomy

(i) knowledge:____________________ [✓ 4] 3 2 1

(ii) comprehension:____________________ 4 3 2 1

(iii) higher levels of the taxonomy:________ 4 3 2 1

5. Sequencing of content of instruction

P | A Make an X or a ✓ under both P and A

(a) X | X materials at the lower level of Bloom's taxonomy were presented before the material at the higher level

(b) X | X moves from concrete to abstract (hands on to symbols, blocks to numerals)

(c) X | X moves from content of previous instruction to new content

(d) ✓ | ✓ relates student's personal experiences to new content

(e) X | X moves from oral to written work

(f) X | X ends by summarizing main points in the lesson (closure)

(Adapted from MacCannell and Young, 1980)

(g) _ | _ Other (Specify)____________________

Section C: Monitoring Student Understanding

1. Teacher's techniques for student understanding monitoring

P | A Make an X or a ✓ under both P and A

(a) ✓ | ✓ teacher asks questions to monitor student's understanding (indicate frequency)------------------------------ [✓ 4] 3 2 1

(b) ✓ | ✓ teacher asks questions at the different levels of Bloom's taxonomy: Indicate the levels observed below.

✓ | ✓ (i) knowledge (involves students remembering, memorizing, recognizing and recalling information)

✓ | ✓ (ii) comprehension involves students interpreting, extrapolating and describing in own words)

X | X (iii) application and above (requires students to engage in problem solving and applying information to produce some results)

(c) ✓ | ✓ questions are distributed among all students (those who volunteer and non-volunteers)

(d) _ | _ other observations and comments:__________

teacher usually uses when required,
teacher sometimes uses when required,
teacher rarely uses when required,
teacher never uses when required.

2. Questioning techniques used

P | A Make an X or a ✓ under both P and A

(a) ✓ | ✓ teacher asks one question at a time, and waits before asking for a response.

(b) ✓ | ✓ teacher corrects student errors consistently and immediately.

(c) ✓ | ✓ teacher praises frequently and gives positive feedback when student responses are correct.

(d) ✓ | ✓ state questions as clearly and concisely

(e) ✓ | ✓ teacher uses age appropriate language while questioning

(f) ✓ | ✓ teacher attends to the responding student (adapted from Good & Brophy,1984; MacCannell & Young 1980)

3. Handling incorrect answers

P | A Make an X or a ✓ under both P and A

(a) X | X teacher rephrases question

(b) ✓ | ✓ teacher asks a similar but simpler question

(c) ✓ | ✓ other observations and comments: __________

4. Handling students who provide no answers to questions: teacher used the following types of cues

P | A Make an X or a ✓ under both P and A

(a) ✓ | ✓ gives students verbal clues to help them come up with appropriate responses

(b) X | X uses gestural cue, for example, if a student needs to learn how to grate coconut using "Mbuzi", the traditional instrument used for grating, the instructor can make appropriate movement with the hands to remind the student without actually grating.

(c) X | X uses physical cue, in the example of grating coconut given above, the instructor could place his hands on the students hands to prompt the students response.

(d) X | X provides the answer and moves to another question

(e) X | X asks another student to answer the question

(f) _ | _ other observations and comments: __________

	teacher usually uses when required,	teacher sometimes uses when required,	teacher rarely uses when required,	teacher never uses when required.
Section D: Guided Practice				
1. Does the teacher provide time for guided practice (involves giving students opportunity to practice while giving them necessary help to perform skills correctly) in the lesson?				
✓ yes: If yes rate the frequency ------------	[✓ 4]	3	2	1
___ no				
___ other observations and comments: ___________				
2. Teachers' practices during guided practice include the following:-				
P | A Make an X or a ✓ under both P and A				
(a) ✓ | ✓ use of prompts to elicit appropriate behaviour (using cues or hints, such a verbal or gestural hints of the required response)				
(b) X | X fades prompts used until no prompts are necessary for performance of skill				
(c) ✓ | ✓ provides frequent practice				
(d) ✓ | ✓ asks questions to all students				
(e) ✓ | ✓ uses choral group response				
(f) _ | _ Other observations and comments: ________				
(g) RATE: the frequency with which teacher uses prompts to elicit performance from students:__	[✓ 4]	3	2	1
3. Indicate the type of reinforcement used by the teacher and rate its use				
P | A Make an X or a ✓ under both P and A				
(a) X | ✓ descriptive praise (such as stating to the child "I like the way you are working quietly at your desk"). RATE: -----------	4	3	2	1
(b) ✓ | ✓ social praise, e.g., nodding or smiling (specify):__________________ RATE:______	[✓ 4]	3	2	1
(c) X | ✓ social privileges, e.g. a chance to discuss something of interest with the teacher. RATE: ------------------------	4	3	2	[✓ 1]
(d) X | X food rewards. RATE: ----------------------	4	3	2	1
(e) X | X token rewards. RATE:---------------------	4	3	2	1
(f) _ | _ other observations and comments:_________				
Section E: Independent Practice				
1. Does the teacher provide time for independent practice (giving students opportunity to practice acquired skills or information without teachers help?				
✓ Yes: If yes rate the frequency---------------	[✓ 4]	3	2	1
___ No				
___ Other observations and comments: ___________				

teacher usually uses when required,
teacher sometimes uses when required,
teacher rarely uses when required,
teacher never uses when required.

2. Teacher's practices during independent practice include the following:-

P | A Make an X or a ✓ under both P and A
(a) X | X providing students with individual work-sheets
(b) X | X assigning students individual work-sheets
(c) ✓ | ✓ other observations and comments: ____________

Section 6: Classroom Management Skills Used

1. Classroom rules and routines

P | A Make an X or a ✓ under both P and A
(a) ✓ | ✓ the teacher has well established classroom rules and routines, these are procedures used in activities such as distributing materials, moving from one activity to another, and entering the classroom after recess
(b) ✓ | ✓ the consequences are well known by the students
(c) ✓ | ✓ the consequences for non compliance with rules and routines are appropriate (adapted from Good & Brophy, 1978)
(d) _ | _ other (specify): ____________

2. Teacher's reaction to inattention and misbehaviour

P | A Make an X or a ✓ under both P and A
(a) ✓ | ✓ teacher ignores brief, non-disruptive misbehaviour
(b) X | X teacher stops minor, but extended misbehaviour non disruptively, e.g., uses non-verbal cues such as eye contact, gestures, touch or moves close to the misbehaving student
(c) ✓ | ✓ teacher stops disruptive behaviour quickly, e.g., calls student's name, or calls for attention or work but does not over dwell on misbehaviour.
(d) X | ✓ teacher praises someone else's good behaviour (adapted from Good & Brophy, 1978)
(e) _ | _ other (specify): ____________

Appendix C

Inter-Observer Reliability

Section*	Teaching Method	Percent agreement
A #1	Motivating and gaining students, attention	
	(a) Predicts enjoyment	33.3
	(b) Mentions information to be learned	55.6
	(c) Promises external rewards	77.8
	(d) Reminds about later requirements	100.0
	(e) Uses media	88.9
A #2	Review of related material through	
	(a) Questions	66.7
	(b) Quizzes	100.0
	(c) Summary	33.3
	(d) Not observed	77.8
	(e) Not applicable	66.7
A #3	Pre-teaching parts of information to be learned later	
	(a) Observed	44.4
	(b) Not Observed	66.67
	(c) Not applicable	22.2
	(d) Other Observations	88.9
A #4	Statement of purpose of the lesson	
	(a) Teacher shares with students the purpose of the lesson	66.7
	(b) Teacher specifies objectives	88.9
	(c) Other observations	100.0
	(d) Not applicable	88.9
B #1	Delivery of new information or skills	
	(a) Demonstration in front of the group	88.9
	(b) Lecture	100.0
	(c) Prepared hand-outs	100.0
	(d) Media (filmstrips, slides, tape, etc.)	44.4
	(e) Question students' to check understanding	88.9
	(f) Inviting and responding to students questions	33.3
	(g) Focused discussion	44.4
	(h) Students take turns reading or reciting	88.9
	(i) Drill (flash cards, math tables, chorus questions)	100.0
	(j) Practical exercise or experiment	88.9
	(k) Seat work or homework assignment	55.6
	(l) Game, contest	66.7

* The sections on this table correspond to the sections in the observation instrument

Appendix C
Inter-Observer Reliability

Section	Teaching Method	Percent agreement
B #2	Clarity of presentation of material	
	(a) Teacher repeats or reteaches information if necessary.	55.6
	(b) Use of built-in review	88.9
	(c) Explanation of unfamiliar words and concepts	33.3
	(d) Monitoring student understanding	88.9
	(e) Vocabulary at the students, level of comprehension	100.0
	(f) Avoids the use of distracters	44.4
	(g) Appropriate rate of speech	100.0
	(h) Use of good enunciation	100.0
	(i) Checking understanding before moving to the next part of the lesson	88.9
	(j) drawing attention to difficult points	66.7
	(k) presenting information in small steps	77.8
B #3	Maintaining attention	
	(a) Asking questions of any students whether they volunteer or not	88.9
	(b) Using a variety of media	55.6
	(c) Frequently changes instructional methods	55.6
B #4	Levels of Bloom's taxonomy at which the information or skill presented	
	(a) Knowledge	100.0
	(b) Comprehension	88.9
	(c) Application and higher levels	66.7
B #5	Sequencing of content of instruction	
	(a) Materials at the lower level of Bloom's taxonomy presented before the material at the higher level	55.6
	(b) Moving from concrete to abstract	77.8
	(c) Moving from content of previous instruction to new content	88.9
	(d) Relating student's personal experiences to new content	88.9
	(e) Moving from oral to written work	87.5
	(f) Ending by summarizing main points in the lesson	

Appendix C
Inter-Observer Reliability

Section	Teaching Method	Percent agreement
C #1	Techniques of monitoring student understanding	
	(a) Asking questions to monitor student’s understanding	100.0
	(b) Asking questions at the different levels of Bloom’s taxonomy	
	(i) knowledge	66.7
	(ii) comprehension	62.5
	(iii) application an higher levels	88.9
	(c) Distributing questions among all students (those who volunteer and non-volunteers)	
C #2	Use of questioning techniques	
	(a) Asking one question at a time	100.0
	(b) Correcting student errors consistently and immediately	100.0
	(c) Praising frequently and gives positive feedback when student responses are correct	88.9
	(d) Stating questions as clearly and concisely as possible.	100.00
	(e) Using of age-appropriate language when questioning	66.7
	(f) Attending to the responding student	100.0
C #3	Handling incorrect answers	
	(a) Rephrasing question	100.0
	(b) Asking a similar but simpler question	88.9
C #4	Handling students who respond to questions	
	(a) Using verbal cues	77.8
	(b) Using gestural cues	88.9
	(c) Using physical cues	75.0
	(d) Providing the answer and moving to another question	22.2
	(e) Asking another student to answer the question	88.9
D #1	Providing of guided practice	
	a) Providing time for guided practice in the lesson	66.7

Appendix C

Inter-Observer Reliability

Section	Teaching Method	Percent agreement
D #2	Teachers’ practices during guided practice	
	(a) Using of prompts to elicit appropriate behaviour	87.5
	(b) Fading prompts used until no prompts are necessary for performance of skill	62.5
	(c) Providing frequent practice	75.0
	(d) Asking questions to all students	75.0
	(e) Using choral group response	87.5
D #3	Using reinforcement	
	(a) Descriptive praise	33.7
	(b) Social praise	66.7
D #3	(c) Social privileges	22.2
	(d Food rewards	100.0
	(e) Token rewards	55.6
E	Independent practise	
#1	Provision of time for independent practice	100.0
#2	Teacher’s practices during independent practice	
	(a) Using work sheets	88.9
	(b) Assigning students individual projects	66.7
F	Classroom Management skills	
#1	Classroom rules and routines	
	(a) The teacher has well established classroom rules and routines	100.0
	(b) The consequences for non compliance are well known by the students	100.0
	(c) Consequences for non-compliance to classroom rules and routines are appropriate	100.0
F #2	Teachers reaction to inattention and misbehaviour	
	(a) Ignoring brief, non-disruptive misbehaviour	88.9
	(b) Teacher stops extended but non-disruptive behaviour non-disruptively	44.4
	(c) Stopping disruptive behaviour quickly	55.6
	(d) Teacher praises someone else’s good behaviour.	37.5